THE

TRADESMAN;

OR,

COMMERCIAL MAGAZINE.

No. 14.] AUGUST 1, 1809. [Price 1s. 6d.

[THE following account of bleaching is taken from the same valuable source as the first article in our foregoing Number—we are induced to extract largely from this work, not only as we understand there are, as yet, few, if any, copies of it in England, but also, because in many parts it will afford replies to several queries inserted in the Tradesman; for these we shall refer to the page and volume as we proceed; and we beg, if our Correspondents who have sent us enquiries on Bleaching, Smalts, and other articles connected with that business, do not find that our extracts exactly meet their requests, that they would point out to us where they wish for further information. Ed.]

ON BLEACHING.

THERE are three methods—The Dutch, the Irish, the new or French method.

The Dutch method is very particularly described by Lewis Cromelin, and copied by the late Dr. Home and the compilers of the Encyclopædia Britannica. As each of the methods in the first and the last parts of the process coincide, it is unnecessary to describe each at full length.

The first operation is steeping in warm water, of the temperature of 180° of Farenheit's thermometer; bran is often added to promote the fermentation brought on by the dressing used by the weavers; the fermentation appears by the air-bubbles which rise to the surface, by the swelling of the cloth, and the scum which rises to the top; this fermentation is acid, and accelerates the process of bleaching; it continues thirty-six or forty-eight hours; when the scum begins to fall, the putrefactive fermentation commences; the cloth is then drawn washed, and laid on the grass; when dry, it is fit either for the Dutch or Irish method of bleaching.

Before we attempt to account for the effects of bleaching stuffs, and before we determine which method is to be preferred, we should ascertain

the properties of the colouring matter of linen and its solvents. With this intention Mr. Kirwan took five quarts of burnt ley, in which yarn had been boiled*, added two ounces weak marine acid; this did not occasion any effervescence, but a deposition of a sediment of a greyish green colour, which was insoluble in boiling water; when dried it assumed a shining black colour, but internally it remained of a greenish yellow; it weighed one ounce and a half; it was insoluble in oil of turpentine, or linseed oil; it communicated a brownish tinge to the sulphuric and marine acids, and a greenish to the nitrous; it was not sensibly diminished by either of them.

He then dissolved one ounce of sweet barilha, Dantzick, pearl-ash, Cunnamara kelp, Cashup and Clark's pearl-ash, in six ounces of pure water each, and digested eight grains of the green colouring matter in an ounce of ley made from each kind of those ashes in the temperature of 180° during three hours and a half. Two ounces of the barilha ley, one and a half ounce of the Dantzick, one and one-half ounce of kelp, one ounce of the Cashup, one ounce of Clark's dissolved the whole. He found that liver of sulphur is of all alkaline compounds the most powerful solvent of the colouring matter; hence, kelp which contains it, affords a ley which may be advantageously used in the first process of bleaching; so may the solutions of Cashup, and markoff, and artificial sulphurets.

The caustic vegetable alkali is most powerful, next to liver of sulphur; next to this, caustic mineral alkali; mild mineral and mild vegetable alkali occupy the last place. Solution of Windsor soap dissolved a very small quantity, and lime water scarce any of it; as one pound of lime water contains about thirteen grains of lime, its solvent powers must therefore be very weak.

Any ash ley may be converted into solution of liver of sulphur, by adding to it, when boiling, of sulphur one-twentieth part of the weight of pure alkali contained in it.

The Dutch method consists in steeping the cloth in warm ley, but not boiling it, as the Irish do; this operation is performed in the following manner; different kinds of ashes, such as blue, white, pearl, marcoff, cashup, and Muscovy ashes are dissolved in water, with a few pounds of soft soap. The cloth is brought in dry from the green, and put into a large vat, the ley at a 100° is thrown on it, when it continues a few hours in this steep, the ley is drawn off, and then heated to 180°, this is repeated six or seven hours, and the degree of heat gradually

* Transactions of the Royal Irish Academy, vol. III.

increased till it is at last thrown on boiling hot; when the cloth hath remained in this three or four hours, the ley is let off and thrown away.

The cloth is then laid on the green and watered for six hours, afterwards it is allowed to lie till white spots appear on it before it is watered; next day it is watered twice or thrice, if the weather is dry; the third day it is lifted and passed through the same course of bucking as before. This alternate course of bucking and watering is repeated ten or sixteen times, before it is fit for souring. After souring, it is rinsed, mill-washed, and rubbed by women's hands, in soap and water; it is then sent to be bucked in ley rather stronger than formerly, which is gradually increased in strength till the cloth is of an uniform white, then the ley is weakened gradually every course of bucking till the process of bleaching is finished*.

The Irish method commences as the Dutch, with macerating in warm water, thirty-six or forty-eight hours † (the degree of heat of the water is lower when the temperature of the air is warm, higher when cold) it is then washed, grassed and boiled alternately, till fit for the sour and the boards.

As the extent of our manufacture prevents the practice of watering, the ley is washed out of the cloth after each boil, before it is exposed to the sun and air; this should be done with the utmost care in warm weather, else the alkali may crystallize on the cloth and make it tender.

As this is the part of the process in which the Dutch and Irish methods differ, the subject is of material importance; the improvements in the arts enable us to determine a dispute which has continued one hundred years.

We have seen that the principal part of the colouring matter of linen is a resin, which, like lac, is insoluble in water, and in oils; but can easily be dissolved in alkaline caustic leys; heat promotes the action of solvents upon lac. A high degree of temperature greatly promotes and assists the action of alkalies upon the colouring matter. This, and some other facts mentioned hereafter, are in favour of the Irish method of bleaching.

Bleaching by alkali, purified of carbonic acid by lime, assisted by

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* Home's Experiments on Bleaching.

† If burnt ley is used in this steep, it will stain the cloth and prevent the acid fermentation of the dressing, which, if encouraged, would dissolve the alkaline compound, precipitated upon the yarn, at the time of boiling.

a high temperature, has been long practised in secret in the Levant; it is now practised as a recent and valuable discovery, and was first published by Chaptal. In this method, a small quantity of ley is put into the bottom of a boiler. Cloth or yarn steeped in the same kind of ley is loosely thrown into the boiler, and suspended in it on racks or grates of wood, it is closed with a steam-tight cover; to prevent accidents from the violent expansion of steam in a high temperature, a safety valve is attached to it. Heat is then applied a few hours, the steam and heat are equally diffused, penetrate the fibrous texture of each thread, increase the solvent power of the alkali; the colouring matter is completely and speedily united with the ley, and easily removed by washing. As the action of soda upon cloth, even in its pure and caustic state, is less violent than the action of pot-ash, our attempts to bleach in this way, should commence with ley of soda, and our first essays should be on a small scale.

The apparatus for bleaching with caustic alkaline vapour is described by Chaptal and improved by O'Reilly in his Essay on Bleaching; a description and drawing of it are in the 10th vol. of the Philosophical Magazine.

A small boiler is set in a furnace, on C. Rumford's plan, and a cut stone dome like an oven, erected above it; this is furnished with a steam-tight iron door, armed with a safety valve; in this dome two reels for winding up pieces of cloth are fixed, like common reels to turn vertically. In the inside of the boiler two rollers are fixed, one near each reel; when a number of pieces of linen or cotton cloth are connected and wound upon one of these reels, an end of one is drawn under the rollers, and attached to the other reel, on which there is no cloth; when this reel is turned, it draws the cloth off the first, and so on the contrary. The cloth being freed from the dressing, in the common way, is immersed in alkaline caustic ley, wound upon one of the reels, passed under the rollers, and attached to the other reel; the boiler is then filled eighteen inches deep, with purified ley; this covers the rollers and that part of a piece extended under them. These rollers are so fixed that they can be unhooked at pleasure, and the cloth passed through the ley in the boiler, or through the steam only, as the operator chuses. The workmen continue to wind the cloth off-and-on those reels for two or three hours, about which time the colouring matter is sufficiently dissolved. It is then washed, immersed in the oxygenated muriate of lime, exposed three or four days on the grass, steeped in diluted sulphuric acid, and finished.

This method has been practised in manufactories of printed cottons,

where it is necessary to bleach out the stain of madder, from every part of the piece, except that part where the figure is intended to remain*.

This process has been recommended for purifying linen and linen rags.† These might be placed on frames, and exposed to the vapour of weak ley, the impurities with which they were charged would soon be dissolved, and by washing them in pure water, or in water slightly saponaceous, all the dirt would be removed, and complete whiteness obtained. This method is recommended to the managers of public hospitals; it would be attended with considerable saving, and completely destroy the power of infectious vapours, which might have been condensed upon the clothes of the sick.

Our common bleachers have long had a confused idea of the powerful effects of a high temperature of ley upon cloth, which they have attempted to produce by hasty boiling without a cover, not considering that the temperature is kept low by the vapour or steam carrying off the heat with it, which the steam-tight cover prevents; in every operation of this kind a safety valve, as in steam-engines, is absolutely necessary; while it prevents the temperature from rising too high, it effectually prevents accidents. What would be the expence and trouble attending an apparatus where twenty thousand pieces were bleached in nine months?

If the cloth is wetted with ley, might not pure water be substituted for the ley, in the bottom of the boiler, or might not the steam from the ley in the bottom of the boiler be sufficient?

A steam apparatus for boiling cloth, has long been in use in Messrs. Stevenson's green, at Spring-field, near Belfast; there is a boiler similar to that used in steam-engines, with a safety, a feeding, and a damped valve. An iron tube is connected with the boiler, from which two tubes proceed, and enter near the bottom of two iron vats; each of these tubes is divided into three branches, within each vat. The tubes are furnished with cocks by which the steam may be stopped from entering any of the boilers at pleasure; near the mouth of each vat there is a flanch, on which a metal cover rests, at the time of boiling; this great cover is laid on and taken off by the same crane, by which the cloth is raised out of the vats after each operation. This apparatus might be regulated so as to produce any necessary

* O'Reilly's Essay on Bleaching.

† See Tradesman, vol. II, page 342. Ed.

degree of temperature, and might be easily applied to the eastern manner of bleaching, by steam. It is attended with many advantages, it is a security from the fracture of cast-iron boilers. The steam supplies the waste occasioned by the evaporation from boiling in the common way, and prevents any part of the cloth from drying in the boiler. It is a security against shot holes and other damages; it saves fuel and labour, and prevents the heat from escaping with the steam.

That a mixture of leys procured from mineral and vegetable alkalies is more effectual in dissolving the colouring matter than any of them separately, is an opinion generally received; wherefore, when our bleachers use pot-ash, they throw a bag of barilha ashes into the bottom of the boiler, not considering that barilha contains charcoal, and that barilha and pot-ash are in a considerable degree caustic, and that hot leys in this state dissolve charcoal, which discolours the cloth, and requires a boil in pure caustic ley to extract it; every kind of ashes should be used in the form of ley, and ley should be purified from carbonic acid, with lime, and made with pure cold water. The degree of strength of these leys is determined by the taste; it would be more accurately done by a glass hydrometer, when immersed in vegetable alkaline ley; but as mineral alkalies contain neutral salts, in different proportions, this standard is uncertain. This aluminous test is most perfect.

The cloth being macerated in warm water, washed, and exposed on the grass for two days, it is boiled, washed and laid on the grass for two days; then again boiled. It is thus alternately boiled, washed, and exposed on the grass, till fit for the sour. This method is now generally practised in Ulster.

Sulphurets.

Mr. Kirwin's experiments on the colouring matter of linen-yarn and on the alkaline substances used in bleaching, proved, that liver of sulphur is of all alkaline compounds the strongest solvent of the colouring matter. Ley of caustic pot-ash may be reduced to a solution of liver of sulphur, by adding to it, when boiling, one-twentieth of its weight of the alkali contained in it. The sulphur leaves a stain upon the cloth, which is very easily removed, by boiling it in pure alkaline caustic ley.

The high price of ashes in times of war, and the effects of lime upon sulphur, similar to those of alkalies upon it, suggested the idea of substituting the sulphuret of lime for sulphuret of pot-ash, in

bleaching. Mr. Higgin's experiments confirmed this opinion*. The sulphuret of lime is made thus: Mix four pounds of powdered sulphur with twenty pounds of quick lime, pour gradually on them eight or nine times their weight of boiling water. The heat and ebullition occasioned by the union of the lime and the water is sufficient to form the sulphuret. When the ebullition ceases, the lime, which is not united to the sulphur subsides; the mixture is to be well stirred and allowed to settle, the clear solution is then drawn off, and more water added to the deposite, till the whole of the solution amounts to sixty gallons. It may be prepared by boiling four pounds of sulphur in fine powder, and twenty pounds of lime, slacked and sifted, in sixteen gallons of water for half an hour; soon after the agitation of boiling is over, the insoluble matter falls to the bottom, the clear solution is drawn off; water is to be added from time to time to the undissolved deposite in the boiler, and taken off clear till the solution of sulphuret amounts to sixty gallons.

As quick-lime attracts moisture and carbonic acid with avidity, it is kept pure with great difficulty, wherefore a bleacher at a distance from lime kilns may preserve it, in the form of putty, and in making the sulphuret, he may take twenty-five pounds of it and four pounds of powdered sulphur, and boil them half an hour in twenty gallons of water. The operation is to be pursued as above, till the solution amounts to sixty gallons. The cloth, purged of the dressing, is steeped twelve hours in this solution, washed and exposed to the sun and air, and the same operations repeated, till fit for the boards and acid steeps; boiling in this solution has been tried, but with no better effect than cold steeping; boiling in alkaline caustic ley, hastens the process and dissolves the remaining sulphuret, which may have given a disagreeable tinge to the cloth. This method recommends itself by promising to save fuel, alkali, and soap.

Lime.

Steeping in a mixture of quick-lime and water, of the consistence of milk of lime, has been successfully tried. The cloth is put into it when brought to a scalding heat, to 200° and macerated without any additional heat, for twelve or fifteen hours; it is then carefully washed opened and hanked, and again washed; then exposed to the sun and air; after three such manipulations, it is boiled in ley and grassed, till fit for sour and the boards; severe laws against the use of lime in

* Essay on the Theory and Practice of Bleaching.

greens, have greatly retarded our progressive improvement in the art of bleaching*.

Authors, on this subject, have not recommended the practice of bleaching with quick-lime, but have generally written with severity against it; wherefore, the act prohibiting the use of it in bleach-yards is continued; but no practice has been more warmly recommended by eminent authors than bleaching with leys purified, or made caustic with quick-lime.

The late Dr. Black, of Edinburgh, who received the first rudiments of his education in Belfast, demonstrated in a paper he published in the second volume of the Edinburgh Physical and Literary Essays, that the mildness of lime-stone, chalk and marble, is owing to an elastic fluid contained in them, and that when this is expelled from them by fire, they are converted into quick-lime; to this fluid he gave the name of fixed air; the French school has given it the name of carbonic acid gas. He likewise demonstrated, that the same kind of fluid is the cause of the mildness of some alkalies, and when it is expelled from them by heat, or attracted from them by some substance which has a greater attraction for them, they become hot, more caustic to the taste, and their attraction for oils and resins is greatly increased. The attraction of quick-lime for this air is greater than the attraction of alkalies for it; therefore, wherever quick-lime is mixed with alkalies in making ley, as for soap boiling, it attracts the air contained in the kelp, and leaves the ley caustic fit for making soap and bleaching.

Many prudent bleachers in this province, imitated the soap-boilers in making leys, fifty years past; but the trustees, and several prudent bleachers, were prejudiced against it. But, in the year 1766, the late Dr. James Furguson, of Belfast, published an excellent experimental Essay upon the use of leys and sours in bleaching, in which he has greatly elucidated this subject. With the intention of teaching bleachers to ascertain the quantity of carbonic acid fixed in ashes, and in lime-stone, and consequently of ascertaining the proportional quantity of lime, from different kinds of stone, which should be mixed with any quantity of the different kinds of ashes, and which would require all the gas con-

* Any trustee, or any officer acting under the trustees, may enter into any bleach-yard, at any hour of the day, and search all places therein, and in case any lime be found, or lime mixed with leys, the possessor of such bleach-yard, and all persons working in said buck-house (unless proved upon oath that such lime was intended for building) shall forfeit £10 each. 21st George III.

tained in them, to restore the lime to a mild insoluble state. He ascertained the quantity of the gas in each kind of stone and in each kind of alkali he had an opportunity of trying*. Dr. Black, with the like good intentions, published an explanation of the effects of lime upon alkaline salt, and pointed out a method whereby it may be used with safety and advantage in bleaching. His method and conclusions are, one half of kelp that is commonly used will be sufficient, when sharpened with lime; twenty pounds of dry slaked lime may be mixed with every hundred of kelp; the same is said of cashup or markoff ashes. Spanish kelp, or barilha ashes will bear one half of its weight of lime, and then one-fourth of this kelp that is employed at present, will answer the purpose. Pearl-ashes will probably require double or treble their weight of lime, and will become so much the more active and powerful, that they may be diminished to one-fifth or one-sixth of their usual quantity. Dr. M'Bride, formerly of Ballymoney, late of Dublin, wrote, for the benefit of bleachers, an abstract of these two Essays last mentioned†.

So small a quantity of quick-lime is soluble in water, as a six-hundredth or seven-hundredth part of the water. Leys used in bleaching cannot dissolve even so much. No danger therefore can arise, from using much more lime than the quantity prescribed.

Soap.

Two or three kinds of soap only, are used in Ulster. First, hard white soap made of kelp or barilha and tallow. Second, hard yellow soap, composed of soda, tallow and resin; the resin is added to render it cheaper; it is not used by our bleachers; the third is soft soap, made of pot-ash and fish-oil. It was long supposed that hard soap could not be made with pot-ash; we now make hard soap with it, by throwing common salt into the boiler.

Chaptal laid open to the world his discovery of a process of making soap from old woollen rags, and the refuse of woollen manufactures.

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* If then leys free from fixed air, be most effectual in bleaching, does not the advantage appear of mixing so much lime with our ashes, as is sufficient to attract the whole of their fixed air, and thus to bring them to their highest degree of perfection.

† These with Dr. Home's Experiments on Bleaching, were published in Dublin, in 1771.

Sir John Dalrymple, by a similar method, made soap from the muscular and cartilaginous parts of fat fish*.

Sours.

The first sours used were butter-milk and infusions of wheaten or rye meal; these are subject to three different stages of fermentation, the vinous, the acetous and putrid. The acid continues to increase till the third commences, and with a rapidity proportioned to the temperature of the air. The period at which the putrid fermentation, which is hurtful to the fibrous texture commences, is uncertain; wherefore, the mineral acids which are not subject to such changes, and which retard and oppose putrefaction, are universally used in Ireland.

When alkali attracts the carbonic acid from fire or from the atmosphere, it is not perfectly neutralised by it, but if this gas is thrown into caustic leys, it is attracted by part of the alkali with so much avidity, as to become perfectly saturated with it; this part is then insoluble in water, as leys have an opportunity of uniting with the carbonic acid, when cloth is boiled in it; this salt is precipitated on the fibrous texture, and prevents the farther action of the alkali upon the colouring matter. This obstruction is removed by some other acid which has a stronger attraction for the alkali than the carbonic, and which, when united with it, forms a compound salt, soluble in water; this is the object desired in sours. Dr. Ferguson, when speaking of this salt, uses the language of Dr. Home, then common among chymists, and calls it an earth, because it was insoluble in water; he clearly described its qualities, and the method of obtaining and dissolving it†.

Any of the mineral acids dissolve this salt; but that which is very antiseptic, at the same time effectual and cheap, is the acid of vitriol; so called, because it was obtained from green vitriol, commonly called copperas, by distillation in earthen retorts made of fire clay; the residuum is colcothar.

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* Perhaps our respectable Correspondent at Berwick-upon-Tweed, (Mr. Graham,) may favour us with his experiments on making glue from the same parts of fish. Ed.

† It was proved in the thirteenth experiment, that some earth was precipitated from a ley, by its absorption of fixed air. As part, therefore, of the alkali becomes insoluble, it in part, precludes the action of succeeding leys; it is necessary to take this earth out of the cloth, and this can only be done by the use of acids. *Experimental Essay.*

It was long obtained for medical purposes, by burning sulphur, under a bell-shaped glass; the coldness of the air condensed the vapour, which trickled down the glass, into a broad glass-dish, placed below it. In a large work erected near Lisbon, in 1764, it was obtained by burning sulphur and a small quantity of nitre in large glass globes. These were expensive, and on a small scale; they gave place to great leaden chambers, in which the fumes of the burning sulphur are confined and condensed.

A very large manufacture of the mineral acids has been erected it the townland of Ballymacarret, near Belfast, and another at Moyallen.

A quart of dephlegmated sulphuric acid, should weigh three pounds and three quarters; it is very seldom more than three pounds and a half. Ten naggins of such acid are sufficient to make two hundred gallons of sour, of a proper strength for eighty pieces of yard-wide linen. I am assured that a quart of the sulphuric acid manufactured in Ulster, generally weighs more than three pounds eleven ounces, which the bleacher will consider when he measures the acid*.

If the sour taste has been destroyed when the cloth has been six hours in the steep, too much of the acid has not been used. If the sour has been long delayed, a moderate quantity of it is insufficient to saturate the insoluble compound; but when sours are often repeated, and the same quantity of acid used, the part of the acid which is not satutated will act upon the fibrous texture and make it tender; each succeeding sour should be weaker.

The first sour should be tried with a hydrometer; if it loses its acidity by the salt extracted from the cloth, too much acid has not been used; sour a little stronger, which rises the hydrometer a little higher, may be fixed upon as a standard for other sours, after an equal number of boils in ley of the same strength. When sours are long deferred, the alkaline-compound precipitated upon the cloth, precludes, in a great measure, the action of succeeding leys; sours should be early applied, and they should not be again used till after some intervening boilings, and as heat increases the active power of solvents, the operation of sours applied warm, would be more expeditious and effectual. When linen is drawn out of the sour, it is washed, scalded in soap ley, soaped, rubbed, boiled, washed, and exposed on the grass.

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* We would recommend our Correspondent T. L. page 261, vol. II, to attend to this. Ed.

These manipulations are repeated, in Ulster, till a due degree of whiteness is acquired.

Smalts.

In the last scald a small quantity of indigo is sometimes added; but indigo reflects a tinge too dark. The well known blue of laundresses is preferred, and generally used. This is made from a metalic ore, or oxide, called cobalt, found plentifully in Saxony; when this ore is roasted, it is called zaffer; when this is fused with three parts of sand, and one of pot-ash, the product is blue glass; which, when pounded, sifted, and ground in mills, forms smalts. That the blue may be obtained of various degrees of fineness, the smalts are agitated in casks filled with water, and pierced with openings at different heights. The azure brought by the water of the three different cocks, forms the different degrees of fineness, known by the names of azure of the first, second, and third fire*; the second cock sends out azure of a very good quality for mixing with starch.

Saxony and Bohemia were long exclusively possessed of smalt-works. By the exertions of Compte de Beust, the French have divided the trade with Saxony; the Compte has found near the village of Juget, a quartz sufficiently charged with cobalt, which when fused for smalts, requires no additional quantity of the ore. Smalts are sometimes adulterated with hair-powder, which is easily detected by mixing them with water; the starch continues mixed with the water, the azure falls to the bottom.

When linen was starched, it was dried on the grass, or on hedges; but Mr. John Nicholson of Lawrence-town, on the Upper Bann, in the year 1727, demonstrated to the Trustees, that it was more conveniently and more perfectly done, in houses and lofts constructed for the purpose†.

[*The new or French method in our next.*]

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* This in part will reply to our Correspondent, N. see our last Volume, No. II, page 420.

† And as the encouraging his bleach-yard may be of service to the public, by improving the colour of our linens, your Committee are of opinion, that the sum of £50 be given him to enable him to build a dry-house, which shall be ninety-two feet long, and twenty feet wide.

Abstracts from the Journals of the Trustees, p. 93.

ON THE GENERAL CONSUMPTION OF COAL IN ENGLAND, AND VALUABLE COAL MINES IN IRELAND.

OF all the species of mineral productions, coal has generally afforded the most important sources of employment to the people, both by the facility which it affords to the operations of ameliorating the soil, in the reduction of the price of the calcination of lime-stone, and by its extensive use in almost all branches of manufacture. In so much so, that in Great Britain manufactories are almost universally seated in coal countries, and in those, agriculture is generally much more advanced than in other parts of the kingdom.

The first use of coal has not been clearly made out by any of our historians. Pennant says, "That coals were known to the Britons before the arrival of the Romans, who had not even a name for them; yet Theophrastus describes them very accurately, at least three centuries before the time of Cesar, and even says that they were used by workers in brass. It is certain that the Britons had a primitive name for this fossil, being that of *glo*, and as a farther proof, I may add that a flint axe, the instrument of the Aborigines of our Island, was discovered stuck in certain veins of coal, in Craig-y-Pyer, in Monmouth." But another of our writers, whose work in illustration of ancient manners, has long been valued, runs into a different extreme.

Bishop Fleetwood says, "That whenever coals are mentioned in old accounts, we are to understand *charcoal*, and not *seacoal*, which has not been in common use an hundred and fifty years, (dated in 1707,) at least not in London, though I find them in Matthew Paris, under the name of *carbo marinus*, in the time of Henry III."

In 1234, when Henry III confirmed the charter of his father to Newcastle-upon-Tyne, he gave the inhabitants licence to dig coals and stones in the common soil without the walls called the Castle Moor, or to convert them to their own profit, in aid of their fee-farm rent of an hundred pounds per annum. This, says Dr. Anderson, is the first mention of coals dug at Newcastle, which were then probably confined as fuel to the use of the town; for the city of London had at that time, as may be easily gathered from the Doomsday Survey, so many woods and copses round it, and the carriage both by land and by water was so cheap, that coals from Newcastle would have been far more expensive than the wood and turf fuel then in use from its own neighbourhood. The historiographers of London relate, that in

Edward the First's reign, seacoal was in so much request with several of the city trades, that on the complaint of the nobility and gentry that they could not go to London on account of the noisome smell and thick air, the king issued a proclamation, forbidding the use of it, even in the suburbs, on pain of fine, loss of furnaces, &c. Those trades however soon finding the great scarcity, and the price of wood fuel daily increasing, discovered it was still their interest to use seacoal, and notwithstanding the prohibition entered into a trade with Newcastle. In 1357, the townsmen's licence to dig coa was increased by a special grant from the crown of the soil, in which they had before only liberty to dig, and in 1379, the trade had grown so considerable, that Edward III. imposed a duty of 6*d.* per ton each quarter of the year, on all ships from Newcastle laden with coals. Such was the introduction of coal to common use.

Mr. Evelyn in his curious work called *Fumifugium*, written in the reign of Charles II, proposed the removal of such trades as required great fires, five or six miles out of London towards Greenwich ; also of slaughter houses and tallow chandlers, and to plant fragrant nurseries and gardens in all the low grounds round the city.

The complaints of its unhealthy tendency has long been made, yet we find, notwithstanding the disregard of *Fumifugium*, that the metropolis with double its population within the last hundred years, and treble its manufactories, is yet more healthy than heretofore, and it will be found, we may have in time to come, more to fear from a failure of the supply of coal, than from contagion or disease bred by its use.

The advantages of the abundance of coal in Great Britain, immense fields of which, are situated in the neighbourhood of those parts of the coast of England, Wales, and Scotland, immediately opposite to Ireland, enables that country also to participate largely in its benefits, although it is well known that Ireland is in general very abundant in that precious article; but from the price of labour in that country, many of the ports are cheaper supplied with coal from Whitehaven, although they have river and canal navigation from different mines.

It seems also a singular bounty of nature to Ireland, that in the west and north-west parts, where the navigation would be tedious from its remoteness from Great Britain, there is found abundance of coal, as well as in the internal counties of Kilkenny and Queen's County. Coal, in the mountains of Leitrim, is found in the greatest abundance, not only sufficient to supply all the western districts of Ireland with fuel, and for the purposes of agriculture, but also for working the rich beds

of iron ore that are found adjacent to these mines of coal. At one place at Arigna alone the beds of coal have been traced four miles square, and the lime-stone and iron-stone of the best quality and inexhaustible, and which afford for the manufacture of iron all the advantages to be found in Shropshire and other parts of Great Britain, and to which in a few years it will render as much service as that valuable manufacture has of late to South Wales.

The extensive works at Arigna, situated in the county of Roscommon, are on the west side of Loch Allen, on the banks of the river Arigna, and south end of the mountain Brahlieve, which abounds with coal, iron-stone and lime-stone; besides other mountains in the neighbourhood, abounding with the same minerals.

In former times, numbers of bloomerys were erected on the various mountains, and these bloomerys were continued till all the wood in the country was worked up; the last of them was at Drimshambo, at the south end of Loch Allen, and some people are yet alive who remember to have seen it at work. These Bloomerys were worked entirely with charcoal, for it was not at that time known, that iron either cast or malleable could be produced by means of pit coal; they worked upon no other mine, but the iron-stone from the mountains. Both the lime-stone and iron-stone are reckoned of the best quality and inexhaustible. The thickness of the seam of coal already worked, is not much more than three feet, but as four square miles of this coal has been already traced, and one square mile of it is computed to supply a sufficient quantity for a furnace to work about 500 years, there cannot readily be a scarcity. It is also to be observed that there has been discovered on the neighbouring mountains at Dobally, a seam of ten feet thick.

The northern parts of the county of Cork also possess valuable mines of coal, but for want of roads and canals, hitherto they have been but partially opened. Strong indications of coal are said to have been observed in the counties of Down, Cavan, Monoghan, and Donegal. The western coast likewise seem not destitute of this useful mineral; all the maritime parts of the county of Clare are replete with bituminous shistus, though from the inclination of its strata, the coal veins seem to lie at a considerable depth, and the principle bed to dip beneath the bed of the ocean.

From all these appearances, it is to be hoped that Ireland will, ere long, stand next to its sister kingdom in proud emulation, in the various foreign markets with the produce of its manufactures, the great source of the wealth of all nations. In all nations and ages the mineral

treasures of the earth, when rendered sufficiently productive, have contributed in a considerable degree to the advancement of the wealth and prosperity of the countries in which they have been discovered, and together with agriculture, and the fisheries, may justly be said to be the true foundation of the wealth of nations. Iron alone gave the power to the inhabitants of the old world and even those of the new.

From Ireland then we may expect a very plentiful supply in addition to England, capable of furnishing sufficient both for fuel and trade, beyond any reasonable calculation, and before the expiration of which, nature may have formed fresh strata, for the supply of distant ages. Turf or peat also is of infinite service as fuel, not only for domestic purposes, but for various manufactures, and when properly charred forms a good substitute for coal in the smelting of metals, particularly lead, and is useful also in the smelting of iron. In the middle parts of Ireland, at the greatest distance from the scite of the coal mines, this substance is found most abundant. The great bog of Allen, which extends its various branches into the counties of Westmeath, Kildare, King's County, and Queen's County, is an inexhaustible source of this substance, and various branches of manufactures will no doubt in future times be established in their vicinity.

SUBSTITUTE FOR BARK, AND SCOTCH METHOD OF MAKING INK.

THE great scarcity as well as dearness of oak bark, and also the high price of gall-nuts, being a matter of great moment to our extensive trade of tanning, and in the peculiar methods of dying the various articles of British manufacture, owing their perfection in a great degree to the astringent qualities of those two substances; any thing that can be applied either as a substitute in part, or wholly, to lessen the consumption of those articles, must be a valuable and national benefit. It is true, many different substances have been at times applied in their stead, but they have been for the most part either inferior in quality or liable to some great objection, and not answering the intended purpose. Yet it appears that there is a very common and plentiful vegetable possessing the astringent quality in a very high degree, and from some experiments which have been made thereon, it appears highly proper for the use of tanning; that is the root of the *Pseudacorus*, or yellow water flag, the culture of which in marshy

lands, otherways useless would supply a sufficiency for any demand. For immediate use no preparation whatever would be wanting, only simply crushing the roots similar to apples in a cyder press; the roots might also be dried and kept for use as occasion might require.

In Scotland, a use for the roots of this plant is found out, which seems hitherto entirely to have escaped the most accurate writers on Botany. In that country the common ink is made thereof. They cut some of the roots into thin slices and either boil or infuse them in water till the liquor is highly tinged with them, they then pour it clear off, and then putting into it the blade of a knife or any other piece of iron, they rub it hard with rough white pebble and by degrees the liquor becomes black; they continue rubbing till it is as deep a black as they require and it makes a tolerably good ink. The difficulty of procuring a sufficient quantity of oak bark for the purposes of tanning, has been long severely felt on the continent, particularly in Hanover; and many curious experiments have been made to ascertain the possibility of procuring a substitute from various indigenous trees; and a very extensive tannery has been established for years at Linden, where the *sumach* or *rhus coriaria*, has been found to answer the purpose of a substitute extremely well; and it has been found that calf skins manufactured in this way equal the best English leather, and are in great request for shoes and boots.

Ammoniacal Liquor as produced from Coal, a Substitute for Madder and other Foreign Woods, in the process of Dying; also as Manure.

THE following is the substance of evidence, as taken before a committee of the House of Commons, to whom a bill was committed, to incorporate certain persons for procuring coke, oil, tar, pitch, ammoniacal liquor, essential oil, and inflammable air from coal, in May, 1809.

Mr. William Bryan, a dyer in Spitalfields, stated that from sundry experiments he had made from the ammoniacal liquor produced from coal, by Mr. Windsor's stove, he had been enabled to make a number of neat shades of drab from the silver grey to the brown, which would stand washing and every other purpose, quite independent of any other colouring matter, and equal to what was generally procured from foreign woods or madder, which are now at a very high price. The experiments he had alluded to were upon cotton, but that he had seen experiments also (although not by himself) made upon silk and wool,

and that the colours so produced were more beautiful than on cotton, and in order to have produced similar colours in the ordinary way, they must have used both Brasil or other red wood, some madder, fustic and copperas; which from this process was derived entirely from the ammoniacal liquor.

From his evidence, it also appeared that considerable quantities of sugar of lead and pot-ash were also used, both of which are expensive articles, in the general method of dying, which would also be greatly superseded by the use of ammonia; and in order to raise a strong yellow in the same manner as with pot-ash, a small quantity of blue stone, or the sulphurate of copper was added, to make the colour more full. Exclusive of the cheapness of this new material, there is also reckoned another great advantage, which is, that the whole process is done with cold liquor, thereby saving a great expence of fuel.

This liquor would no doubt answer many other useful purposes, not being confined to the dying of the colours before mentioned, for besides the colouring of drabs, it was tried for rousing, which gives the blueish tint upon the crimsons, answering that purpose better than any other ingredient, particularly in not causing the colour to bleed, that is, to become loose, and some of it to be taken up again in the liquor; but this kept the liquor clear, and rather tended to fasten the colour than loosen it. With respect to the colour of purple, from two specimens produced before the committee, they were much more beautiful than could have been produced from logwood without ammoniacal liquor; it is to be observed, however, that this liquor was not used without a metallic mordant* to fix the colour.

This ammoniacal liquor, besides the purposes of dying, as adduced from several witnesses before the committee, and prepared from the distillation of coal in its process of producing the gas light, appears

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* The term mordant is derived from the French word *mordre*, to bite or corrode, and is applied to those substances which are employed in dying, to facilitate or modify the combination of the colouring particles with stuff. Much depends on an application of proper mordants, both for the variety, brightness, and durability of the colours. Those most in general use, and cheapest, are the metallic oxides of tin and iron. The ordinary solution of tin as a mordant is made with that species of nitric acid called single aqua fortis, and as it is usually prepared, it is found capable of dissolving about one-eighth part of its weight of granulated tin; to each pound of aqua fortis is added either two ounces of sea salt or sal ammoniac; and the acid is most commonly diluted with a little water. The technical term of this solution amongst dyers is spirit.

capable of being also applied to the purposes of agriculture; the following is the substance of a paper thereon read to the committee by Mr. W. Cox, chemist.

Mr. C. says, he thinks himself justified in a conclusion, that a judicious application of ammonia to land might be made from the simple consideration that all the powerful and concentrated manures of high price and in great request, are just so in the degree in which he has found them by analysis to contain either ammonia or the elements that compose it. Soot, well known to be in small quantities a powerful encourager of vegetation, contains much carbonate of ammonia. That pigeon dung is a dressing for turnip land in great request in the north, where many hundred quarters are annually sold at 121 shillings the quarter; (though a very small portion of the demand is supplied,) which he has found by experiment to be richly impregnated with carbonate of ammonia as well as with the well known element of ammonia azote; and it was from the dung of the animals which fed on the fertile plains of Egypt that all the sal ammoniac, known in commerce, was for many centuries obtained. Sal Ammoniac, according to Pliny, acquired its name from the Temple of Jupiter Ammon. Soon after sal ammoniac became an article of European manufacture, it was discovered that the bones and horns of animals yielded its peculiar salt; from whence the name spirit of hartshorn, given to the volatile alkali used in medicine.

It has been of late years discovered that the scrapings, shavings, and chips of the horns used in the manufactures, (particularly the knife handles at Sheffield,) are the most powerful and the best of all land dressings known; and it is from these very materials also, that the greatest quantity of ammonia is to be obtained, wool, silk, and hair excepted, and these are again in great use in agriculture when collected and sold as old woollen rags. Bones of all kinds, not excepting human bones, are sent by sea in great quantities from the metropolis into the north, for the same purpose.

A great difference is observed by farmers in the qualities of the manure of cattle when fed on oil cake or on hay, and is supposed to be four times the value, in the first case: the beneficial effects of sometimes mixing lime with arable soil are easily explained in this way. The ammonia is always to be recognized by its peculiar smell. As soon as newly slaked lime is mixed up with the mould of a good soil, but which is beginning to shew signs of impoverishment, in this case the ammonia which had formed a chemical combination with the fixed acids of the manure (formerly ploughed in, and fermented,) is not

at liberty. These are the phosphoric and vitriolic acids, which, as is well known, will leave ammonia to combine with lime. From hence Mr. Cox said he had no hesitation in declaring as matter of opinion, that the production of ammonia in great quantities, and its judicious application to agricultural purposes would be processes of great importance to the landed interest. By the ingenious contrivances of Mr. Winsor in the refrigeratory of his distilling apparatus, the whole of that principle is saved, which in Mr. Murdock's process is said to be wasted. It will, however, most likely happen on trial, that the ammonia which is thus produced, will require to have its caustic and powerfully stimulating qualities mitigated and modified by a combination with some remains of animal or vegetable matter, as the ammonia is found to be so united in all the instances specified, but nature has provided us with a material of the latter kind in infinite abundance, which when rendered soluble in water by alkali has been found by several agricultural experiments to be equal in effect to forty times its weight of fold-yard manure.

As the lighting manufactories by gas lights has been introduced with considerable success in several of the manufacturing towns*, the above properties of the ammoniacal liquor as produced in addition to the coke, tar, and oil, exclusive of the inflammable gas deserves the particular attention of those manufacturers who wish to economize in the production of light from tallow or oil.

ON THE COAL MINES AT WORKINGTON.

[*Translated from M. Jars Voyages Metallurgique.*]

TO THE EDITOR OF THE TRADESMAN, OR COMMERCIAL MAGAZINE.

WORKINGTON is eight miles distant from Whitehaven. Many mines of coal are wrought in its neighbourhood: that which is nearest the town belongs to an individual, who has lately purchased the estate with the royalty. When he came into possession, only one seam of coal had been wrought; but he has chosen to make further search, and has met with six workable seams, about nine or ten fathoms distant from each other. The upper seam is only two feet three inches thick; the least thickness which will pay for working in this country. The rest are all thicker; one is as much as seven

* Vide page 138, No. 3, vol. II of the Tradesman.

feet; but it contains no more than four feet of coal; being separated by two beds of the black earth called *mettle*, of which I have spoken above. This earth is extremely vitriolic. I have seen a heap of it which had effloresced, and heated till it took fire; it emitted a vapour which condensed into sulphur in the openings from which it proceeded. The lowest seam, which is sixty fathoms perpendicular at the engine pit, is four feet thick of pure coal, and of an excellent quality.

The mines of Whitehaven and Workington have always been subject to foul air, which has cost the lives of a great number of workmen. Six weeks before my arrival at Whitehaven, there had been six workmen dangerously wounded; and during my stay there were two killed and many burnt in the mine at Workington.

This air is particularly dangerous, on account of its inflammable quality; since it instantly takes fire by the flame of a candle. To avoid this accident, they have many machines called flint mills. These are composed of a square frame of iron, about 15 inches long by 8 broad; in it are fixed two axes, on one of which is a toothed wheel seven or eight inches diameter, which turns a pinion on the other, of the diameter of about an inch and a half. On the same axis with the pinion is a small wheel of steel, four or five inches diameter, and very thin. By help of one of these mills, a man will give light to five or six workmen. He supports the machine against his belly on one side and against some fixed place on the other; with one hand he holds a flint, larger than a gun flint, against the edge of the steel wheel, and with the other turns a handle fixed to the axis of the large toothed-wheel, which turning in the pinion gives a very rapid motion to the steel wheel; and this, by its friction against the flint, sends forth a copious stream of sparks. (See Tradesman, Vol. II. page 445.)

This machine, though less dangerous than any contrivance hitherto known, is not, however, perfectly secure; since the sparks which it produces are capable of kindling the bad air, when of a proper mixture with pure inflammable air. There was a very recent instance of this; at the time of the late accident, there was no fire or light in the place, except what was produced by the steel mills. When there is no circulation, and the foul air is too abundant, the sparks give no light at all. In this case the workmen quickly leave the place, otherwise they would probably perish. They are sometimes extremely sick with it, and fall down senseless. They would undoubtly perish by suffocation, if they were not quickly relieved by removal into the fresh air.

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To prevent such accidents, they always set a number of men to work in the same place; and these have the precaution to call to each other every five or six minutes; notwithstanding which there is not a week that they are not obliged to bring out some of them into the air quite senseless. The effect of the bad air, in this case, resembles that of an emetic or a very irritating purge; it renders them sick for many days.

When the foul air takes fire, the surest way to avoid being killed, is, when they have time, to throw themselves flat on the ground, and to bury their faces as far as they can in the mud.

Of those who die, some have scarcely any marks of burning; others are scorched all over; others again, have no external wound at all. The effects of this foul air are very singular: they may be compared to those of gunpowder fired in a close place. Those within reach of the flame are quite roasted; or at least much burnt; the rest suffer by the rapid and great dilatation of the air which immediately takes place; these are infallibly suffocated if they do not secure themselves against the great condensation and compression of the air which succeeds, by throwing themselves on their faces in the mud.

We are assured that when an explosion of foul air happens, there are fewer men killed by the fire, than by what they call the *return of the air*, or blast, and which may be called condensation. I have conversed with a *master miner*, or bottom steward, who has been burnt four or five times, and who bears very evident marks of it upon his face and hands; he informed me that he always avoided the return of the bad air, by throwing himself flat on the ground with his face in the mud. The two men who perished two days before I was in the mine, and with whom the above-mentioned person was, were killed by the return of the air, and were not at all burned; whilst those who were with them *were* burned, but in no danger of losing their lives.

Another very singular circumstance of which I was informed is, that persons suffocated by the air preserved heat in the joints of their bodies, and were not stiff till after two or three days. It is astonishing that, with such frequent accidents, they do not employ all imaginable means to save these poor unfortunate people, who probably do not die till a long time after the suffocation.

The upper seam of the mine at Workington is not at present wrought. It contains in its old workings, a vast quantity of foul air. From these to the day they have conducted a small tube, the mouth of which is not more than an inch and a half in diameter; from this tube there

continually issues a stream of bad air, which is set on fire and burns perpetually, throwing up a *jet* of flame about a foot high above the mouth of the tube. This flame is easily extinguished by giving it a blow with a hat; after which if the finger be applied to the opening, a cool stream of air is perceived to issue. I presented a candle at least six inches above the opening, and it took fire immediately. The flame is blueish, and like that which rises from spirits of wine. It is very extraordinary that the fire does not communicate by this tube with the body of foul air in the mine, into which it would be the height of imprudence to go with a light. (See Tradesman, No. 11, page 445.)

Not long ago there was a similar tube above the mines at Whitehaven; but at present all these works are opened, and there is a complete circulation in the mine. The director at that time (anno 1765) proposed to the magistrates to conduct from the mine different tubes into every street of the town, and by this means to light the streets during the night!

When the explosion of foul air sets fire to the mine, which does not often happen, the most certain expedient is to stop the fire-engine, and to suffer the waters to rise to the place where the fire is.

There are many conduits, or air-courses made with boards, and many doors in the mines at Whitehaven, to introduce and renew the air in many works. These produce a very good effect; and serve as new proofs of the theory which I have established in the fifteenth memoir, and of the application which I have given of it. A person need not be a very deep natural philosopher to see that by means of the principles which I have established, it is very easy to expel the bad air from dangerous places. Accidents happen only because the air is not renewed, and because it is rarefied by an inflammable, bituminous, and very subtile matter, which continually evaporates from the bed of coal. What proves this is, that, after an explosion, the people may work for many days in the same place without danger. I have gone through many places in these mines where workmen have formerly been killed, but where, at present, there is not the least danger, because a complete circulation of air has been introduced into them. The mines at Whitehaven are very convenient by their situation for facilitating the renewal of the air; since the mouths of some of the pits are much more elevated than those of others. This is not the case at Workington, where the pit-mouths are nearly upon a level: but by help of a conduit of no great width, one of the

extremities of which should be continued along the mine in proportion as the works are advanced, while the other should terminate in the furnace of the fire-engine, they *might establish* a current of air fully sufficient to secure the safety of the workmen.

It is reckoned that the coal mines in the neighbourhood of Whitehaven, Workington, Harrington, and Maryport, produce daily a thousand *tons* of coal, each of which weighs 14 cwt. Most of this coal is exported to Ireland, and sells on board the vessel at 3*s*. 4*d*. the above measure. The duty on coals exported is reckoned about a shilling for three such tons.

The coal, taken at the mines, for the consumption of the country, is sold at two-pence a ton less, but then the smaller coal only is sold in this way. It appeared to me that the coal they burnt in the town was very strong.

They have waggons and waggon-ways as at Newcastle. The coal is of the same species as that of Newcastle; but in quality is reckoned not quite so good.

SOME ACCOUNT OF THE IRON FORGE NEAR WORKINGTON.

TO THE EDITOR OF THE TRADESMAN, OR COMMERCIAL MAGAZINE.

NEAR Workington, a small river falls into the sea, on which an iron forge has lately been established, at about half a mile from the town. By all appearances it will become considerable. There is already one high furnace at work; and another is building. That which is at work is supplied only with charcoal from Scotland. The same species of minerals are employed as at Clifton furnace, and Carron. The principal ore is a kind of *tête vitrée*, *glasskopf* of the Germans, which in England is called *kidney ore*. The mine of this (from which also Carron is supplied,) is three or four miles from the forge. Another kind is brought out of Lancashire; besides which different kinds of *iron stone* are extracted near the forge.

The pig-iron which proceeds from this *charcoal* furnace, is refined upon the spot into very good malleable iron. The furnace which they are building is intended to smelt the ore with coaks, for the purpose of making only cast-mettle goods, from the pigs thus obtained.

The waggon-way from the mine to the ships, passes directly by the foundery.

They are at present building a slitting mill; and forming several other establishments for the forgeing of anchors, and all sorts of iron goods.

AN ACCOUNT OF THE COAL MINES AND IRON FORGES IN SCOTLAND.

TO THE EDITOR OF THE TRADESMAN, OR COMMERCIAL MAGAZINE.

I. *At Carron, near Falkirk.*

THE laws which subsist in the North of England with regard to the working of mines are the same in Scotland; that is to say, it is necessary to have the royalty, to be authorized to dig for minerals below ground.

About five or six years ago, the proprietor of the estate and royalty at Carron, wrought the coal on his own account; but what he did was trifling, in comparison with their present state. An English company, composed chiefly of merchants in Birmingham, having examined the quality of the coal, and its vicinity to water-carriage, (it being only three-eighths of a mile from the sea,) and observed that there was also a considerable stream for the use of their machines, took a lease of it from the proprietor for the term of eighty years. They also agreed with the proprietors of the estates between them and the sea; and of those on which they meant to erect their iron works. One proprietor having been desirous to impose unreasonable conditions, they have been obliged to make their road considerably round.

They have discovered three beds of coal under each other, and know not whether there may be any still deeper. The first is about forty fathoms deep; the second ten fathoms lower; the third five fathoms lower still. The inclination, or dip of these beds is one fathom in ten towards the south-east: it has some varations, as we have been shewn, which indeeed is almost constantly the case with all mines, so that instead of dipping, they sometimes rise to the south-east, and form, between them, two inclined planes. In this case, the bed is impoverished, diminishes greatly in thickness, sometimes is entirely cut off; and so continues till it resumes its ordinary inclination.

Besides this inconvenience, there is the further one, of being obliged to work the sole or pavement of the bed, in order to drain off the waters to the deepest pit; for which there is no necessity when the bed preserves its dip and direction.

In the old mine they are working only the upper seam, but in the new mine they work the second, which is best adapted to the use which we shall mention below. This is from three to four feet thick; consisting, in its upper part, of a hard compact clear burning coal, called *splint coal*. These are not consumed in the country, but sent to London, where they are preferred to the Newcastle coal for burning in apartments. The middle of the seam is of a softer quality; it contains leaves, and separates into plates, like the schistus. Between the plates there is a very singular appearance, perfectly resembling charcoal dust, and staining the fingers, as it does. This, which is called *clodcoal*, has very little of a soldering, or caking quality. It is used only for the iron forges. The third part, or lower bed of the seam, is a very compact, and (often near the sole) even stony, coal. This is used for the fire-engine; and vended for the consumption of the country.

This seam, as well as all the rest, is wrought by undertakers, the workmen being paid according to the work done. They are associated together in companies, and furnish their own tools and candles. They are paid three halfpence a cwt. for the good coal, that is to say, for the two higher beds; and only one penny for the inferior, or lower, which is sold in the country. There are some workmen who gain as much as twenty shillings a week, and work no more than seven or eight hours a day.

Every company of workmen is divided into two bands, one to work in the morning, the other in the afternoon. The work of the *morning-band*, is, to cut out the lower bed; for which they have picks pointed on both sides. The after-dinner-band has only to bring down the two wedges, which they place between the coal and the roof; and by striking which with iron mallets, they bring down the good coal in very large pieces; which is necessary, both for the London markets, and the iron forges.

They leave no pillars in the mine; but work at first only on one side, supporting the roof with straight pieces of timber, six or eight inches thick; which they draw in proportion as they advance, leaving behind them the rubbish, upon which the roof sinks without any inconvenience; it being always supported by props in the places where they are at work.

The rocks which compose the roof and the sole are like those at Newcastle, already described.

They lead the coal from the principal pits by the four wheeled waggons upon waggon-ways, as at Newcastle. Into the old mine,

where the works are more extensive than in the new, they have taken horses which never come out again. These horses draw the coals where roads are constructed for that purpose; where they are not broad enough, the coals are drawn by men. And where there are as yet no roads made at all, they have little trams, drawn by boys.

In general, the engine and gin-pits are round, and about twelve feet wide. They are lined with brick or stone walls, from the surface to the solid rock; which supports itself without walling or frame work.

They do not make use of corves, as in the north of England, but draw the coal in square chests of about two feet and a half in each dimension; they are made of boards well bound with iron. The bottom forms a door, which opens by means of a hinge.

These chests are raised by gins moved by two horses. There is at the pit-mouth a moveable gibbet, with a rope, which is coiled round a windlass. This rope passing over a pulley at the extremity of the gibbit, suspends an iron crook directly into the pit, so that when the coal-chest is at the top, they hook it upon the cord, and disengage the hook of the gin-rope, to which they hang another empty chest. The full one being thus suspended on the gibbet, it is turned on one side; the bottom of the chest is opened, and the coal falls into the place appointed for it. The bottom is then closed, and the gibbet turned to bring back the chest to the pit-mouth, where it waits the arrival of that which is coming up. This machine appears very useful, since it saves a horse, which as has been shewn, is employed for this purpose in the north of England.

Each of these mines has a fire-engine, with a cylinder of fifty inches diameter. There is only one boiler at the new mine; but they are on the point of adding a second, that they may have it in their power to repair one while the other is at work. They are constructed entirely of iron-plates; which are painted on the outside with white-lead and oil, to prevent the rust, as they are placed in the open air, without any cover. In the inside they put between the joints of the plates, a cement composed of quick-lime and ox-blood, to prevent the escape of the water.

They make use in these mines of high pumps, the diameter of which is commonly thirteen inches.

HISTORY OF THE TRADING JEWS.

In a trading country like England, where protection and encouragement are so readily granted even in time of war to foreign merchants and tradesmen, and where under particular circumstances they are admitted into a still greater right of protection and safeguard by being admitted as denizens and even naturalized subjects, the Jews have for ages been sheltered in the hospitable land of Britain, safe from that persecution which seems to have followed them through all other countries ever since their dispersion. A retrospect of their history as connected with trade, it is presumed, cannot fail of being interesting to both Christian and Jewish dealers.

The exact time of the first settlement of the Jews in Britain, does not appear from any of our ancient historians, but Waller believed them to have been settled in England during the supremacy of the Romans. During the feudal ages, the Jews seem to have been the most opulent, polished, and even literate portion of the community. They were the only bankers, or as they were then literally termed *usurers*, or persons who let money out to *use* or on interest, and they solely conducted the affairs of foreign trade. The faith they had acquired from their literary knowledge, gave them a great credit and sanction with the state; and in the time of William Rufus, they were not only permitted but encouraged in entering into disputations with the bishops concerning the true faith; for according to Tovey, this monarch swore "by the faith of St. Luke," that if the Jews got the better of the dispute, he would turn Jew himself. They increased in numbers and power till the reign of Henry II. when several severe statutes were enacted for the regulation of trade and commerce between the Christians and Jews, in consequence of the oppression and insolence of those wealthy people. Some idea may be formed from the riches amassed by them, when the Chronicles of Matthew Paris and Holinshed record that in 1188, the Parliament at Northampton proposed assessing the Jews at 60,000*l.* and the Christians at 70,000*l.* for carrying on the projected war; and in this reign, several of the wealthiest of them were banished from the kingdom. Under the reign of Richard the Third, the nation at large became highly incensed against the Jews, which was much augmented by the declamation of the clergy stirring up the prosecution of the Holy War by the Crusades, and those bigotted men, exasperated that they should have all the trouble and expence of this undertaking, whilst the Jews, who were enemies of Christ, were enjoying and enriching

themselves at home, thought it would be a meritorious act to destroy the whole of them, and then seize upon their property for defraying the expences of their undertaking. At this time it appears the internal commerce of the kingdom was mostly conducted by Jews, and at Stamford fair there were many hundreds of these people assembled, when the whole of them were set upon by a strong party of the devout fanatics, and all of them either killed or dispersed, and plundered; nor does it appear that any person was brought to justice for these enormities; the principal ringleaders embarking with their spoil for the Holy Land, to expiate their crimes. About this time it is supposed that the Jews had introduced into commerce the important improvement of bills of exchange, and a law was passed, appointing judges or *justicers* to hold courts concerning the regulations and restrictions of their trade and commerce, whereby all debts, pawns, mortgages, rents, possessions, &c. between the Jews and Christians were required to be registered, and indentures made, one of which said indentures was to remain with the Jew, and the counterpart to remain in a common chest of the district or city, for these charters and indentures so kept under the sanction of government, a certain tax was payable; from these deeds or contracts, the Hebrew of which is *shetar*, or by contracting the *he*, is derived the *star* or *starra* in our Latin records, from whence it is conceived comes the name of *Star Chamber*, or the receipt of the exchequer, where the chest for Westminster was kept. These stars or enrolments were for the most part wrote in the Hebrew tongue alone, or also in Hebrew on the top of the parchment, and in Latin at the bottom thereof.

If any Christian became indebted to a Jew by such *star* or indenture, put up and reserved in the chest, and paid not his money at the day appointed, together with all the interest thereon, the Jew then issued forth letters by way of process against the debtor, to appear before the justices especially appointed under the law for that purpose; but before judgment could be obtained, a fine for the recovery of every pound was paid to the king *.

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* According to Matthew Paris, in an ancient manuscript of laws and customs, established in this king's reign, for the government of the English dominions in France, the following is a curious extract as relating to Jews coming into the Isle of Oleron. "This is the toll for the Jews. Every Jew and Jewess not settled in Oleron, must pay each a tax of four deniers to the king for every time he or she comes to Oleron; and if the Jewess be pregnant, she must pay eight for herself and the child in her womb." And it is also recorded,

The intolerant policy of Richard the First occasioned the emigration of all the wealthiest Jews, and a consequent defalcation of the revenue, which was so sensibly felt that King John in 1199, used several arts to draw them back into his kingdom, confirming their ancient, and offering them several new privileges, especially that of choosing a high priest by the title of *Prestyter Judæorum.*

Henry the Third liberated many of the Jews who were in prison, and ordered a badge to be worn by them for distinction, being two broad stripes of white linen or parchment, on the fore part of their upper garment.

In this reign, Stephen Langton, archbishop of Canterbury, and Hugo, Bishop of Lincoln, in hopes to drive them away for want of sustenance, published injunctions throughout their dioceses, that no Christian should presume to have communication with, or even sell them any provision, under pain of excommunication. Such was the zeal set forth at this time in the cause of religion, with the interposition of royal authority; and Rapin tells us, that when the Gerbardine heretics made their appearance in the reign of Henry II. and orders were given not to relieve them, the prohibition was so punctually obeyed, that all those wretches miserably perished with hunger. However, this does not appear to have been carried in force generally against the Jews, or they would also have been soon exterminated. As the Prior of Dunstable seems to have seen things in another point of view, for much about the same time he granted free liberty to several Jews to reside within his lordship, and enjoy all the privileges of it, in consideration of the annual payment of two silver spoons. The necessities of the king continuing to tolerate them, they erected a new and stately structure for a synagogue; but this being forbid by the Canon law, the same was seized upon for the crown, and dedicated to the Blessed Virgin, afterwards called St. Anthony's Hospital, being granted to the brethren of St. Anthony of Vienna; and in 1262, when the king disagreed with his barons, and had retired from his court in Oxford to London, in order to keep the citizens more firmly attached to his interest, it is recorded by Stow, that he gratified them by permitting a slaughter of 700 Jews at one time! Although they obtained footing in many of the principal towns in England, yet there were some towns who considered the Jews

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that on non-payment of these fines, the Senechal of Oleron adjudged them to receive corporal punishment, by adjudging the Jew or Jewess to be ducked in the sea.

as a nuisance amongst the trading part of the community, from the great difficulties many poor tradesmen lay under from the burthen of the usury allowed for their taking up money on mortgage, &c.; and several towns obtained special royal authority, to forbid their residing within their liberties, particularly Newcastle, Southampton, Winchelsea, Wycomb, Newbury, &c.

It appears that a very strict and rigorous registry was kept of all Jews, so that the king's officers might at all times find them, or on any complaint remove them from place to place, and when once they were suffered to enter the kingdom they were prohibited to depart without special licence, which they could seldom obtain; and if they attempted it, which they would sometimes do, to avoid the heavy taxes imposed on them, they were imprisoned, and put to severe fines and ransoms.

In the third year of Edward the First, an act was passed concerning Judaism, which seemed in some measure to qualify the Jews for living in security, but notwithstanding the severe laws and penalties in force against them, for carrying their traffic of usury to too great an extent, and the heavy taxes thereon, which by the bye only made it the greater burthen upon the poor debtor, the complaints of the people were so great, that Edward, in the 18th year of his reign, having sought all possible ways to reform the exorbitant usuries and oppressions which they daily committed, published an edict in Parliament for their total banishment, and a proclamation was sent to all the sea towns, allowing them a safe conduct to depart the realm at their own expence, within a certain limited time. However, the Jews were noted for their traffic and usury, many of them were men of literature, and they left behind them several very valuable libraries of books, one particularly at Stamford, and another at Oxford, which last being purchased amongst the scholars, most of the Hebrew books were bought by the famous Roger Bacon. This expulsion was so complete, that no farther traces of English Jews occur until long after the Reformation.

The judicious politician, Oliver Cromwell, appears to have restored the industry and wealth of the Jews to Great Britain. During the several ages of their persecutions, they must have lost many of the virtues of their early character. Oppression had imprinted an air of meanness and of servile timidity upon their demeanour. The undistinguishing contempt of man, who ought to treat them as equals, had lessened the importance and of course the frequency of respectable characters amongst them. This inferior degree of delicacy, in points of reputation, occasioned their being employed in usuries and other illegal transactions, and these practices kept alive the prejudices of the

magistrate, and even the nation at large. Not being domiciliated like any other foreigner under the protection of the realm, they contracted the habit of all itinerant pedlars, who, never expecting to see the same customer twice, have nothing to apprehend from the fear of detection, thereby preventing them from making an exorbitant gain upon each single transaction, rendering the term *Jew's bargain* proverbial. Thus when schools, synagogues, and institutions of public instruction were so unwillingly allowed them, and their appearance in Christian schools so shamefully resisted, it is no wonder they were sunk into a degree of ignorance which increased to themselves and others the difficulty of bettering their condition. During Cromwell's commonwealth, a deputation from the Jews at Amsterdam waited upon the English ambassador there, who obtained from his master permission for them to send an envoy to England. The person chosen was Dr. Manasseh Ben Israel, a man of great parts, but in reality only a printer and bookseller, although stiled a Doctor of both Physic and Divinity. On his arrival in England, he delivered a shrewd address to the Protector, recognizing his authority and supplicating his protection, and praying, " that as the commonwealth was now changed from a kingly government, the ancient hatred against so innocent a people might now be changed into goodwill." After this, Cromwell summoned a convention or privy council, consisting of two lawyers, seven citizens, and fourteen noted preachers, to consult upon this request of the Jews; notwithstanding several of these, particularly Godwin, Peters, and Nye, greatly exerted themselves in favour of putting the Jews upon a footing with other sects, so many symptoms of prejudice and intolerance escaped from others, that after a conference of four days, Cromwell finding that the measure would not be introduced to the people from the pulpit in the manner he could wish, he therefore dismissed the meeting, saying, they had rendered the matter more doubtful to him than it was before. Whilst this affair was pending, the Rabbee Jacob Ben Azabel professed to entertain suspicions that Cromwell was the expected Messiah; this opinion was evidently propagated for the purpose of attracting a vast concourse of the lower classes of Jews into England, in case the political equality for which Manassah petitioned, could have been obtained. From this time they began again to settle in London, and in the reign of Charles II. who introduced the sale of patents of denization, their numbers considerably increased. In 1684, James II. remitted the alien duty upon all goods exported in favour of the Jews. This was universally resented by the British merchants, who were apprehensive that the same remittance would also be made on goods imported, and

remonstrances and petitions flew to the throne from all parts of the kingdom. After the revolution this order was superseded, to the great joy of the Christian merchants.

[*To be concluded in our next.*]

HISTORY OF SOME IMPROVEMENTS IN THE CORPORATION OF BERWICK-UPON-TWEED.

TO THE EDITOR OF THE TRADESMAN, OR COMMERCIAL MAGAZINE.

LETTER I.

SIR, *Berwick-upon-Tweed, 7th July,* 1809.

I HAVE read with all the attention which my time would allow, the different letters on corporations which have appeared in your useful miscellany, and although I am willing to admit that in the more early stages of society, when the inhabitants of every country were scattered abroad in all directions, and took more delight in hunting in the woods, or wandering with their flocks and herds from one place to another, than in having any settled place of abode; although I am willing, I say, to admit that it was necessary to hold out strong inducements, and by granting exclusive privileges, to prevail on the people to settle in towns, where they might have a fixed residence; yet in the present state of society, I am clearly of opinion that *all* exclusive privileges, whether belonging to a corporation, or any individual company, is inimical to the good of the community at large.

My intention is not at this time, however, to enter on this subject, I rather mean to give you a short sketch of this corporation for near fifty years past. From the accounts which you have given of the constitution of some corporate bodies, I find this is very different from any other that I have yet known. The alterations which it has undergone, and the means by which these changes have been effected, may be amusing to some, and instructive to others, as in some degree pointing out the way in which ancient customs as well as the internal laws and regulations of the corporation were opposed and entirely set aside. But whatever may have been the former narrow policy or restrictive laws of this corporation, justice demands of me to say, that they have now set an example of disinterested generosity, unparalleled, as far as I know, in any borough or corporation in the kingdom.

To return to my narrative; the constitution of this borough consists

of a mayor and four bailiffs, which are chosen annually on Michaelmas-day; the election lies with *the burgesses at large, every one having an equal right to vote on this and all other occasions*; in short the corporation of Berwick may be said to be a republic in the utmost extent of the word, and in this respect differs materially from all others that I am acquainted with; all matters relative to it are transacted in the open guild, to which every burgess is summoned to attend, but no compulsion is used, attendance is entirely voluntary. Every motion made in the guild can only be entered on the minutes that day, and lies over to be discussed the next guild; so that nothing can be done, nor any measure carried into effect without the knowledge of the whole body. All the more material concerns of the corporation are commonly referred to different committees, which are chosen by the guild, but all of those committees must lay the account of what they have done before the guild, and such is the strict jealousy with which they watch all money concerns, no committee has the power to lay out above five pounds on any work belonging to the corporation, till the estimate of such work is laid before the guild for their approbation. The treasurer's accounts are examined every quarter by a committee, and *every* entry, debtor as well as creditor, *strictly compared with the different vouchers*; the whole are afterwards read by the town-clerk in open guild, when every burgess has it in his power to call for a further explanation of any account or expenditure which appears to him extravagant, or not consistent with their rules of economy. But what will no doubt to many appear still more extraordinary is, we have no *corporation dinners*, neither venison or turtle feasts would bear the scrutinizing eye of a Berwick burgess—if the mayor, alderman, bailiffs, or any of the other magistrates, choose occasionally either to dine or sup together, all must be done at their own individual expence. Such are a few of the more prominent features of the laws and institutions for the internal regulations of this borough.

In regard to our connection, as an integral part of the kingdom, all our laws and regulations, both of a civil and criminal nature, are the same as in England; we hold four quarter sessions in the year, and occasionally a goal delivery at the same time, on both occasions the recorder sits as judge, and from his sentence, whether imprisonment, transportation, or death, there is no appeal; but in all civil concerns there is an appeal to the higher courts, if either of the parties chuse to be at the expence of a removal.

I will not detain your readers any longer with our internal regulations, but proceed to state what I consider as of far more importance,

(viz.) the almost unlimited authority which the corporation exercised over non-freemen, who are in this place, called STALENGERS*. It is not yet fifty years, since no person was suffered to open any shop either in the town or liberties, (which extend three miles into the country) who was not a burgess; he was allowed to sell goods in any private room, but on no account to keep open shop; no person exercising a mechanical trade was permitted to work as a master, but only to be employed as a journeyman to a burgess.

Sometimes both masons and carpenters would venture to come from the country to work a few days to some of the *Stalengers*, for as they commonly wrought on lower terms than the burgesses, the non-freemen were always anxious to employ them; but if ever information of such was given to any of the burgesses, a deputation of four or five was immediately sent to order the offender to give over his work, and the punishment inflicted was the seizing and carrying away of all his tools; and threatening him with a more severe penalty if found offending a second time. Some truly ridiculous and laughable circumstances often attended this petty warfare, which I make no doubt would still excite the risible faculties of some of your readers, if I had time to give them in detail. You may easily conceive that such proceedings created the most disagreeable jealousies between the burgesses and non-freemen, which constantly fomented a spirit of discord and animosity not only in the town, but with the people in the country, who always took part with the non-freemen in the town, and the most reproachful terms were sometimes resorted to by the different parties. During all this struggle, the town continued to increase in population, and several people, not burgesses, had continued to carry on some mercantile business in private rooms, or houses not having doors open to the street.

Some time about the year 1773, the *Stalengers* began to call in question the authority of the corporation, and to express some doubt of the legality of such restrictions; this was considered by the burgesses as the most horrid presumption. A meeting was held by some of the non-freemen, and a subscription opened to stand a trial with the corporation, so that the matter was soon at issue between the parties;

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* I have often made much inquiry as to the meaning or origin of this term, which I believe is entirely peculiar to this place, but never could obtain any satisfactory explanation; its derivation seems entirely lost in the lapse of years. Perhaps a corruption of *stranger*, in the sense of foreigner or non-freeman? ED.

and I am persuaded there has scarcely been a law-suit in which all concerned felt a greater interest and anxiety; the cause came to be tried at Newcastle, before the late Lord Mansfield; the most able counsellors were retained on both sides, and the matter was argued at great length; his lordship, in summing up the evidence, made some severe sarcasms on the charter; and the term *Stalenger* afforded some amusement to the audience. After the jury had been some time in consultation, a verdict was given in favour of the non-freemen. When the news arrived, the disappointment of the one party, and the exultation of the other, was great in the extreme; length of time, however, softened the passions of the one, and the liberty obtained molified those of the other party; the number of non-freemen of every profession greatly increased, and at the same time the town seemed to advance equally in trade, wealth, and population. Things continued to go on for a good many years in tolerable peace and quietness, although a certain degree of superiority was cherished in the minds of the burgesses, while with the non-freemen, knowing that they were all considered as holding an inferior rank in society, the remaining seeds of jealousy were not entirely destroyed; and what tended much to keep the embryos alive, to increase animosity, and produce various disputes, was the following. All goods imported by the burgesses were free of shore-dues, [Quay-dues] and every other toll, while the non-freemen paid dues on every article imported or brought into the town by them; on all goods exported by the burgesses they paid shore dues, but every non-freeman paid double; this had no doubt been the invariable custom time immemorial, and till of late years was quietly submitted to: but several non-freemen, of considerable opulence, who carried on an extensive trade, found that the difference of shore dues paid by them and the burgesses was very considerable; and for several years much discontent continued to prevail, and the equity as well as legality of such exactions were frequently called in question; the schedule which the corporation has for collecting the shore dues and tolls at the gates is very ancient, on which account several articles now in regular commerce are not mentioned in it; some articles were charged intolerably high, and others rather low; all these appeared to weaken the prescriptive right claimed by the corporation, and encouraged the resistance of the non-freemen. How long things would have continued in this unsettled state, it is impossible to say; but I am persuaded the non-freemen would not have been very long in bringing the matter to a trial; some circumstances however occurred which produced a most complete revolution, and as far as trade is concerned, has placed burgesses and non-freemen of

every description exactly on the same footing. To people who feel any interest in contemplating the change that time seems to produce on all bodies of people, from the smallest community to that of kingdoms and empires, and in tracing the causes which produce these changes to their source, I hope my narrative will not appear too tedious: and to those who are still labouring under similar disqualifications, it may afford some hints towards obtaining their emancipation. There is the remains of an old pier at the entrance of the harbour, which tradition says was begun by government, in the reign of Queen Elizabeth, and still retains the name of Queen Elizabeth's Pier; but although considerable progress appears to have been made, it was no doubt left in a very unfinished state, and no person taking any interest in the matter, nor any funds being appropriated either for finishing or preserving it from decay, it has for a great number of years been so entirely reduced, as to afford no shelter whatever, so that the entrance to the harbour is completely exposed to both the north and north-east, a large sand-bank lies on the opposite side, and since the reduction of the pier, there is no barrier against the spreading of the river, the sand continued to gain on the south or opposite side, so as sometimes almost to threaten a complete shutting up of the harbour; at the same time vessels from the danger of the rocks on the north were frequently running on the sand on the south side, both in going out and coming in; add to all this the pilots were under no particular laws nor regulations, any authority over them was supposed to be lodged in the mayor for the time being; but that was become entirely nominal, and of little or no effect. Whatever repairs were wanted to the present quay, however urgent, all must come before the guild, and, as I have already observed, every thing is settled by a majority of the burgesses who attend; and as all the ship owners, and all who have any interest in such concerns, bear a very small proportion to the whole number of burgesses, so any thing done for the security or accommodation of the ships, was very up-hill work.

(To be continued.)

ACCOUNT OF A TRAVELLER'S JOURNEY TO HOLLAND, IN THE YEAR 1808.

IT may be a matter of surprise to many, how it could be possible for an Englishman to pass from this country to Holland, and remain there any time without being subject to a rigorous imprisonment, supposed to

be attached to the deviation from the strait adherence of the decrees of embargo and non-intercourse denounced against this country, however unwillingly they are enforced by the natives of Holland.

In consequence of considerable failures both at Amsterdam and Rotterdam, and numerous outstanding debts in different parts of Holland, some of them through a want of confidence in making a sure remittance, and others intentionally from the advantage of the unsettled state of affairs, rendered my presence actually necessary to support the credit of my own firm at * * * * * * * *, and I resolved to risk a journey thither. In order to pass with greater safety, (besides my understanding the language very fluently, from long connexion with natives of that country, and my mother being a Dutch woman) I took care to procure American papers, which are the surest means of passing the ordeal of the officers of police, in as easy a manner as I have known natives of America pass for Englishmen when travelling in Great Britain.

Thus provided with necessary papers, and finding that several regular traders, under the Papenburg and Kniphausen flags, some of them even fitted up as packet-boats, were in the habit of sailing from the port of London under his Majesty's royal licence, I repaired to Gravesend, to choose my conveyance on the spot, as circumstances might occur, knowing that the ship brokers, or rather providers of passengers, and captains, most of them Dutch Jews, are accustomed to send you down to wait for the vessel, under the impression of its sailing the following day, to the great inconvenience and expence attending waiting, perhaps a week or ten days at an inn, where they charge under the impression of never seeing you again, and are therefore resolved, according to the old adage, "to make hay while the sun shines."

But I soon found the bad policy of not engaging a vessel and making a stipulation of the price of the passage on 'Change; for when you are at the port, and the vessel on the eve of departure, the captain knowing the necessity of either going with him or staying behind for the next conveyance at considerable expence, will then have his own price, and the sum asked was no less than thirty guineas, when I knew afterwards some on board paid only twelve: however, as business and expedition was the main object of my travelling, I decided that it was better for me to put up with the extortion of Mynheer, than ultimately pay the sum in addition to my innkeeper's bill, where the fare was execrable, except to those travellers who join pleasure with business, and pay for do. do. as a tax for an occasional dalliance with the lusty hostess of the principal inn, in order to kill time.

The price stipulated for, which by the bye you must provide in English guineas, is merely for your freight as so much lumber; and if you have not the precaution of laying in a sea stock sufficient for three or four days, you will have to lie at the mercy of the master's extra charge *per diem* for his hard biscuit and beef, dished up in a wooden bowl, with a few Dutch pulse, and a glass of Holland's grog. However, as few people can be expected to travel for pleasure in these unsettled times, I did not expect the ease and convenience with which travelling is performed in England either by land or water, my sole view being to get unmolested to Rotterdam and Amsterdam.

We dropt down the river with a pleasant breeze at N. W. on a Sunday afternoon, and long before night were standing out to sea; from the uneasy motion of our little vessel, riding on the water, not much unlike a mishaped turnip, I had very little chance of any rest, although the Captain had given up his birth between me and a travelling Jew, who was going by way of Holland to attend the Michaelmas fair at Leipsig; for the whole crew, consisting only of the master, mate, and two boys, the whole of them were obliged to attend their duty on deck.

Nothing remarkable happened the next day except being hailed by several boats belonging to the men of war brigs on the north sea station, to whom our captain exhibited a licence obtained under his Majesty's Orders in Council; which permitted our vessel trading with the coast of Holland under the pretext of fishing, and in the afternoon Mynheer and his crew brought too, and commenced their operations of fishing, and in about three hours they had obtained a sufficiency of Cod and Dutch Plaice as to appear a very extensive cargo, when the fish was spread in the hold, over the various packages and small barrels of sugar and coffee stowed underneath.

As we now drew near the Dutch coast the captain seemed rather uneasy, from his having passengers on board as well as a valuable cargo, that they and the papers they might have would be a condemning proof of their coming from England: masters are in general strongly forbid taking any by the owners, but English guineas and Dutch guilders are too tempting for Dutch pockets. Besides the Jew, as I have before observed, there were two sugar-bakers as well as myself, and these being rough hardy dogs in appearance, Mynheer persuaded them to equip themselves as sailors, and he accordingly furnished them with jackets and trowsers and felt caps; as for the Jew there was no disguising his long beard, and he as well as myself were left in *propria persona*, to be dealt with as circumstances might require.

The English papers of the ship, together with a packet of about 5 or 6 hundred letters and a parcel of English newspapers, (the latter is a very lucrative trade for Mynheer, as he receives from 10 to 15 guilders for those of late dates) were now deposited at the bottom of a bag of potatoes, and the whole buried under the deepest part of the cargo of fish, and their place supplied on the cabin table with others more suitable for the present purpose, and if boarded me and my fellow traveller the Jew were to declare we were taken out of a Bremener in distress on their passage to Rotterdam, and had lost all our baggage as well as papers, which were carefully concealed below, till the vessel was safely arrived in port.

As we drew near the Dutch coast we were boarded by a row boat, who examined the captain's papers, took a glass of grog, and a few guilders and departed without taking the least notice of either me or Mordicai, and being a calm we brought too for the night. The following morning, venturing to take a peep upon deck, I could descry a tolerably large town situated on an eminence, which the steersman informed me was Gravenhagen, or the Hague, which has been generally reckoned the capital of the country, and as well as the seat of government since the commencement of the republic, till his present majesty has thought proper to remove his court to Amsterdam, to the considerable detriment and we may say ruin of the town. I shall give a more particular description of this place when arrived thereat, as we continued a more southerly course, leaving the Hague on our larboard bow, and making for the *Maes deep*. We continued bearing off and on in the mouth of the Maes the whole of the afternoon, waiting for the tide and the evening to run into port; and we accordingly made the village of Maesluice about 9 o'clock in the evening, of which I could not make much observation before the following morning, neither was I inclined so to do, as I now became extremely uneasy, from the apprehension of being detained and thrown in prison if I could not give a clear account of myself, or if it should be found out that I came from that rival country of traffic, England.

I landed as soon as the vessel brought too, in company with my fellow-traveller and the captain, and got safe without interruption to the house of the *ship's maakelar* or agent, to whom the vessel was consigned, and where my baggage was to be conveyed in safety the same evening. In the mean time the captain informed me he would wait upon the *minister of justice and police* to report his vessel and crew as well as his two distressed Bremen travellers, and to pave the way for preventing too close an investigation of our circumstances, which depended

entirely upon a proper application of that infallible passport or *passe par tout*, a few Louis. The captain now returned, accompanied by a person from the office, who brought a paper for our signature, and stating the object and cause of our journey, which was to be sent to the minister of the interior before we could be suffered to proceed; and moreover, we were enjoined not to stir out of the house till orders were received for our disposal, either to be permitted to proceed on our journey or to be sent to prison; even for this indulgence, that is the liberty of being closely confined, we were given to understand a fee was also requisite, and in our awkward situation we found it most advisable to take the hint. Yet my fellow-traveller the Jew was rather averse, as he alledged as a reason, that a bribe might be construed to imply guilt; however, policy over-ruled his *Jewish* disposition, and I am pretty sure that it told to the proper account. After continuing three days under arrest, and being visited morning and evening by the same *douanier*, or custom-house officer, I was furnished with the necessary passport to proceed to Rotterdam, and took leave of my fellow-traveller, who was proceeding by way of the Hague, where he had some private business, from whence he meant to attend the approaching fair at Leipsig.

Maessluys is reckoned one of the finest villages in the south part of the province of Holland: it is pleasantly situated near the river Maese on the dike, about five miles north from the Brill, and may be reckoned with respect to its trade and situation similar to the village of Barking in Essex, almost all the inhabitants of this place being engaged in the herring, cod, and salmon fishery; and through the supply of these necessary articles of life for Holland, they are enabled to carry on a very extensive trade in many other shapes, as the fishermen's are the only kind of vessels which have been exempted from the general blockading system of Buonaparte. Indeed similar to the same traffic carried on in Barking Creek, it is impossible for all the vigilance of the row boats and Argus eyes of the custom-house officers to prevent a cargo being completely landed and housed in a quarter of an hour from the vessel bringing to; and when once housed, it is rarely liable to confiscation, at least never attempted. Here also, as in London, I found a great imposition with the schippers and porters, as is usually made upon all strangers; and as there is nothing like regular charges, I can only recommend every traveller to bargain as he proceeds, as the least of the evils.

From Maessluys there is a conveyance by a passage boat to Delft, the city of the province of Holland, which sets out six times a day;

and in summer there is a post waggon which sets out from Maessluys to Rotterdam at seven o'clock in the morning, and returns in the afternoon between three and four from Rotterdam to Maessluys.

[*To be continued*]

REPLIES TO QUERIES ON COPPERAS.

TO THE EDITOR OF THE TRADESMAN, OR COMMERCIAL MAGAZINE.

SIR, *No. 5, Pleasant Row, Hackney, 7th July,* 1809.

IN consequence of having contemplated for some years the publication of a Manufacturer's Cyclopedia, I have collected a considerable quantity of materials on the useful arts; the manufactures of my native place, Newcastle-upon-Tyne, were amongst the earliest I visited, and those which naturally enough received a considerable share of my attention. Looking over your Magazines for February, March, and April last, I observe some queries on manufactures, which I believe are yet unanswered; if you think the following worthy a place in your Magazine, they are at your service.

Should the information I may communicate not be thought satisfactory, by the several enquirers, I shall be glad to be favoured with their objections, observations, or further enquiries through the medium of your Magazine; at the same time with regard to the last, enquiries, I would beg that rule to be observed which you have yourself suggested, with regard to manufactures at large. That the enquirer should state, at the same time with his queries, *what he knows of the business in question.*

I am, Sir, &c.

JOHN CLENNELL.

ON COPPERAS.

[*See page* 143, *Mag. for Feb. last.*]

Your correspondent seems anxious to know how large crystals are obtained, and mentions one in his possession fourteen or fifteen inches high, and ten wide. He mentions a suggestion of his own, and also one of the late Dr. Black. I am informed by a gentleman, who was for a considerable time a manufacturer of the article, that his opinion is right; large crystals are formed by putting a smaller number of sticks into the pans; to the manufacturer, it is a matter of no moment so far as it regards the mere size of the crystals, for the quality is no

better, but their formation is of consequence to him, as it regards the time employed, for the process is considerably prolonged in obtaining them.

His first enquiry is, "whether copperas crystallizes better in summer than in winter."

The manufacturers in general, think that there is little or no difference; they say it cannot form its crystals in a severe frost, and that the deposition of the crystals proceeds according to the strength of the liquor, in which the manufacturer, if he knows his business, is able to be nearly uniform; (see also answer to Number 7.) It would appear, however, that a moderate degree of cold is much more favourable to the formation of these crystals than warmth, (see the quotation from Chaptal, at the conclusion of this letter.) It certainly would be highly satisfactory to know at *what degree* the crystallization of this article is best effected.

2. "What are, or ought to be, the relative size of the copperas bed (or beds), the reservoir, and the boilers?"

These like the buildings of other manufacturers, are formed according to the *power* or *expectation* of the owners; the size of the beds is of little or no consequence; if the pans are found too small, they are the oftener filled.

3. "How old is the bed before it becomes productive?"

That depends on the quality of the pyrites which are used; those found near beds of coal, when exposed to the action of the atmosphere, decompose much more readily, than such as are obtained from the Isle of Sheppey, and the neighbouring coasts; the former of which effloresce in less than six months; the latter sometimes require upwards of two years.

4. "If, as is generally reported, the copperas bed is twelve months old, before they can employ it; and if its productiveness is owing eventually to the exposure of surface in the pyrites or coal brasses, would it not be a material saving of time to break, bruise, or even grind the brasses before placing them in the bed?"

The difference in that case, would be very trifling; an esteemed friend of mine who has been many years in this manufactory, informs me that he has tried this experiment; he says, he took a piece of pyrites from a coal pit in the lump, and broke another of equal weight into powder; both were exposed in a damp place, but the lump seemed to effloresce sooner than the other. It is difficult to argue against experiment, but I confess it appears to me, that there is more

probability in the idea that a part of this had been incompletely attended to, than that a production depending on the exposure of surface should fail, when an increased number of surfaces are exposed; whether the error has been with my friend, or rests with myself, I should be obliged by any of your correspondents explaining.

5. "Are the pyrites ever too much moistened, as in rainy seasons? If so, what is the degree of moisture which will best suit?"

A rainy season is much against the produce; for as the rain, when it is superabundant, washes out only what is decomposed, the remaining quantity of water, makes the liquor so weak, as to be frequently let off as waste, that is, not worth the expence of coals even at the pits to boil down.

6. "It sometimes happens that *refractory pyrites* are met with, how are they treated by the workmen?"

They are generally left to time, (see also reply to the third query;) if, however, *refractory pyrites* were roasted to a certain degree, it might assist the efflorescence. Thus, at Geyer in Saxony, the pyrites after being exposed for some time to the air, are soaked in water for twelve hours, then roasted as in the ordinary method of roasting ores in a large bed upon faggots, on which about seventy or eighty quintals are heated red hot, and in this state plunged again into water. This is repeated six times successively, with the same pyrites, by which the water becomes strongly impregnated with vitriol, and is afterwards evaporated and the copperas crystallized as usual.

7. "Finally, what degree of strength is the liquor boiled down to, before being transferred to the crystallizing pans? On this last head I have frequently recommended the use of glass bubbles as in the boiling of alum, in which case manufacturers of this article would have a never failing guide to their next operation."

This is known to the manufacturers, who have a criterion to judge by, either the weight of the liquor, or a gauge, perhaps glass bulbs, as in the alum manufactory; might not the sachrometer of the brewers be equally as effectual?

I beg leave, Mr. Editor, to conclude this by an extract from Chaptal's Chemistry, applied to the Arts and Manufactures, vol. I, page 87, as it will considerably elucidate the foregoing observations.

ON CRYSTALLIZATION.

"It now remains for us to shew what conditions are necessary for bringing a body to a perfect crystallization,

1. "A body does not crystallize, unless, by a previous division, the cohesion is broken, and the particles are enabled fully and freely to exercise their reciprocal affinites.

"This division may be effected by solution; the solution is operated in water for salts, in caloric for minerals, and in alcohol for resins and certain oils.

2. "When a body is dissolved in one or the other of these fluids, the reunion of the particles dissolved is effected by evaporation, or by lowering the temperature of the liquid.

"In the cases in which the solution is performed by water or alcohol, evaporate till small crystals are formed at the surface or on the sides; then suspend the operation, and as the liquid cools, a great quantity of salt in crystals is precipitated. By evaporating the liquid which remains, after removing the crystals on the top, you may obtain a second quantity of crystals, and extract the liquid from all the salt by successive operations. But if the dissolution is effected by caloric alone, as in metallic fusions, and those of sulphur and phosphorus, other precautions are necessary to decide the crystallization. If you suffer a melted metal to cool, it will not fail to appear again, in consequence of the refrigeration, with its primitive form, exhibiting, at the same time, some confused traces, or imperfect lineaments of crystallization, such as are observed in antimony and zinc. But if at the moment when the melted metal begins to harden, you pierce the crust, and let out the metallic liquid contained within, the vacancy will be lined with regular crystals, which almost alway present the cubic or octahedral form. Hence we may infer, that the metal in a mass is nothing but an aggregation of crystals, and that the only method of giving it the requisite cohesion and ductility, is to beat it with the hammer, and to *weld* it.

"From what has been said concerning crystallization effected by evaporation and refrigeration, we may conclude, that, after having saturated a boiling liquid with any saline substance whatever, nothing more is necessary to obtain a deposit of crystals than to let it cool. We shall easily comprehend all these phenomena, if we consider, that there are then two liquids acting upon the salt (water and caloric); and that, by taking away one of them, we cannot fail of having the whole of the salt which it held in solution for a precipitate.

"When the evaporation of the solvent proceeds slowly, the crystallization is always more regular; the particles then unite and arrange themselves by virtue of their affinities; but, on the contrary, when

the evaporation is rapid, the particles are precipitated upon each other, and there is nothing but confusion in their assemblage.

"The slowness of the evaporation not only determines the regularity of the forms, but likewise contributes to give volume to the crystals. This we observe daily in the saline solutions which we leave in a corner of our laboratories; this is demonstrated by all the operations of nature, who forms in time, and by insensible evaporation, saline and stony crystals, which it is impossible for us to imitate, because it is not in our power to cause ages to enter as elements into our operations.

"Rest is equally necessary for the liquid, in order to obtain forms of great regularity: uninterrupted agitation prevents all symmetrical arrangement; it precipitates the crystals as fast as they are formed, and you obtain nothing, if I may so express myself, but the integral particles of crystals.

"We avail ourselves in the arts of the disturbance produced by agitation in liquids to procure crystals of extreme fineness. It is by this method that we precipitate, in very small and delicate needles, the crystals of sulphate of soda, those of nitrate of pot-ash, &c.

"It frequently happens that a solution, though complete, refuses to crystallize; in this case a slight agitation of the vessel sometimes decides the crystallization. Fahrenheit observed, that, in this circumstance, heat escaped at the moment of agitation, which seems to prove that the caloric was interposed between the particles, and that nothing but the slightest motion was wanting to disengage it.

"A crystal formed in water always retains a more or less considerable portion of the liquid, and this is called the *water of crystallization*.

"The only cause of solution is, that the affinity of the liquid overcomes the cohesion which connects the particles of the salt; but in proportion as the mass of the liquid diminishes by evaporation, its affinity of mass decreases, and that of the particles of the body dissolved increases, since they begin to combine with each other. There must consequently be a moment in which the affinity of the salt overpowers that of the liquid; and from this moment the salt which forms itself into crystals must retain a portion of it. This water of crystallization enters as a principle into the combination, since that liquid cannot be discovered either by the eye, or by the touch, or by hygrometrical tests.

"This water of crystallization contributes to give to the crystal its

form, transparency, and cohesion. When it is disengaged by heat, these three characters almost always disappear. If, for example, you expose to heat a transparent crystal of sulphate of lime, you will instantly perceive the water to become volatilized and dissipated in apou r; the crystal will lose its transparency, and be rendered friable and pulverulent.

"Simple substances, such as metals, certain earths, sulphur, phosphorurs, esins, and, in general, all such bodies as are simple, and not soluble in water, crystallize without retaining a sensible quantity of their solvent. But compound substances require to be dissolved in a liquid, that they may there acquire the portion necessary for the formation of their crystals."

I shall in my next attend to the queries in the other magazines mentioned in the begining of this.

J. C.

THE MERCHANT, No. II.

Mr. Editor,

THE concluding paragraph of our friend the Quaker's Letter, as inserted in our last number, relating to the popular term *Speculation*, induces us to make a few observations thereon. This word is now applied more or less to every circumstance that relates to profit or loss, purchase, sale, exchange, or any system of traffic, and makes as conspicuous a figure in the present *commercial* dictionary, as the same term, leaving out the first letter, does in the *political* dictionary of the modern patriots. Perhaps in the hands of the celebrated author of Diversions of Purley, who very ingeniously derives *King Jeremiah* from a *pickled cucumber*, speculation and peculation might be construed into *plain dealing* and *honesty*; but as it cannot be expected, neither would it profit much to a merchant or tradesman to be stored with all the classic and *other* lore of the writer above alluded to, such a declension will not be attempted. In our youthful days, we can well remember the time when merchants and tradesmen were proud and emulous of bringing up at least their eldest son to the same *branch* of business as they and their forefathers had been; this calling soon became too formal for the rising generation, and the eldest sons were then brought up to a different *line* of business, and the youngest son only left to carry on the old and original *branch*. However, this new-fangled system met

with great opposition from the thinking part of the community, and produced the following

CARD.

Branch presents compliments to his young rival *Line.* Begs leave to inform *Line,* that he the said *Branch* has long been the favourite with the public; that he is descended from an ancient and respectable *Root,* and that his family for some centuries have been known all over Great Britain by persons of all trades, professions, ranks, and dignities; that the *Branches* of law, physic, and divinity have long been acknowledged in all the universities, colleges, courts of law, and seminaries of learning; that the country never flourished so highly as when the *Branches* of each trade and manufacture were duly cultivated; and that there are few families of note in the kingdom which cannot boast of some *Branch* which has done them credit. *Branch* nevertheless, under the present pressure of circumstances, finds it necessary to make this public complaint, viz. that many daring usurpations have been committed by *Line,* who has endeavoured to establish the medical *Line,* the law *Line,* the church *Line,* and a variety of other *Lines,* not authorised by any proper and true permission of any of the *Branches* of the said professions, although frequent mention is made of the professional *Line.*

And, further, that the said *Line* has been patronized by the lowest and most vulgar fellows on earth; for instance, it is notorious how general we hear of the cheese *Line,* the grocery *Line,* the linen *Line,* the hair-dressing *Line,* the perriwig *Line,* the undertaking *Line,* and many other *Lines* too long to mention; and it is very common for shoemakers to advertise for journeymen in their *Line*; and when a porter is wanted, any one will be preferred who has lived in that *Line.*

Therefore *Branch* does hereby publicly inform *Line,* that he is willing to contend with him on fair grounds, and prove him an utter impostor; and moreover, that there is but one *Line* which properly belongs to him, that is to say, the HEMPEN *Line*; and in order that he may enjoy his full *swing,* according to all the rights and immunities thereunto belonging, he may, when he pleases, have the use of

BRANCH.

This card had the desired effect for some time, and the various avocations were contented with returning to their original and proper callings; but of late the transitions from common sense and plain meaning have been equally conspicuous. *Branch* is superseded by any *profession* rather than the learned; and *Line* is rarely introduced except in the commission *line,* which empowers a person to trade without capital, without goods, without knowledge, without risk, in short

without any thing. However, these upstarts of the day promise but a temporary reign; and we have no doubt but ere our grey hairs are numbered with the dead, we shall receive the public card of a *speculator* on 'Change, and that of a *peculator* west of Temple Bar.

At our last weekly meeting, one of our party was relating that a particular friend of his, who was a very respectable merchant in the city, had recently sustained a loss of no less than 18,000 *l.* by debt and acceptances from a foreigner, who had within the last twelve months arrived from the continent, established himself as a London merchant on the credit of *John Bull*, and had now embarked on his *commercial concerns* (never to return), having previously shipped off goods in different cargoes to the amount of 50 or 60,000 *l.* and then his house and furniture was just found sufficient to defray the expences of a statute of bankruptcy.

This is only one of many similar instances which have come within our knowledge during this war, and really the credulity of our trading interest in this respect cannot with any kind of reason be accounted for. It may truly be said, that Old England is the asylum for both the good and the bad of all the world; and although we will not deny the policy of granting encouragement to foreign trade and its necessary concomitant, free *ingress* and *egress* to those foreigners concerned therein, yet a nice distinction should be made between persons of established reputation of settled mercantile connexions, and those butterflies of the day who strut upon 'Change with all the consequence of being engaged in commercial affairs in all the quarters of the world, who perhaps the following day (to say the best of them) settle their accounts with a *Whereas*. It must be acknowledged that the superiority of the British manufactures (at least the manufactures themselves) chiefly owe their origin to the continent, but have been improved and brought to that perfection in which they now stand by the ingenuity of British workmen; and England has for ages found its policy in granting an asylum and encouragement to foreign workmen; but with respect to traffic, we are daily the dupes of foreign swindlers.

It has come within our knowledge, that several considerable shipments have been made to Holland; and in order to get them with *safety* into the different ports, a supercargo has been sent therewith as a *confidential* trustee, one of those at all times to be met with on 'Change, who is come over to settle a little business of his own, and having great interest on the continent, readily agrees to take a consignment of goods to the amount of 10 or 12,000 *l.* for the sale of which he is to have from 2½ to 5 per cent, with this he is readily entrusted, and sails away with both ship and cargo triumphant; and in a few weeks we hear of the whole

being condemned, through an unfortunate change having lately taken place in the custom-house officers at the ports of Holland: our fellow merchants then bewail their loss, and hope for better success the next adventure. In short, depredations of this kind are now so common, and the facts so completely within our knowledge, that it appears to be the most systematic way of Napoleon, with the assistance of his "dear brother the smuggler,"* of sapping our trade and commerce with much greater effect, than with all his decrees, or even with the assistance of his privateers.

However, great credit must be given both to the *ingenuity* and *impudence* of foreigners, particularly the French; their wits are always at work, and among the many enrolments of patents for new inventions, which the Monthly List furnishes, one-third of them at least are the produce of foreign speculators.

But whilst our neighbours are noted for the fertility of their invention, we are not behind them in the very extremity of improvement; and we have noticed steam-engines being applied not only to the process of weaving, but for giving motion to a carriage for a considerable number of miles, with greater fleetness than the most celebrated racer on the course at Newmarket.

Again, we have to notice the invention of a foreigner receiving letters patent for converting all the refuse hair of our hogs to the most profitable account by a certain process of curling and baking. This opens a very wide field for the improvement of *John Bull*, and we shall no doubt, in a very short time, see an enrolment of a specification for manufacturing the hair of *Anglo Merino asses* so as to rival the celebrated wool of *Cashimer*, in the fineness of its texture for shawls, &c.

But the impudence of French ingenuity does not shine in this country alone, and its effects are too glaring on the continent to need any elucidation from us; but we cannot help noticing the following curious specimen now lying before us, in the Rotterdam Courant of May last, being an advertisement by one Monnier, a *Frenchman*, written in *German* in a *Dutch* newspaper, to teach the *Italian* language.

Whilst we are daily recording numerous improvements and inventions in the different branches of trade and commerce, as well as the arts and sciences, we must not forget that many valuable arts well known to the ancients are now totally lost to the present generation, and perhaps never to be recalled. From specimens of preserved antiques, we are struck with amazement at the execution of manufactures, not supposed to have been known in what we term the *dark ages*, and

* This epithet has been used by Napoleon in correspondence with his brother Louis.

although not handed down to posterity, it is very evident they possessed many secrets which will require ages to recover.

Hence it appears that we are only revolving in some respects to a former state. The same will also relate to trade and commerce.

In a work which has lately made its appearance in France, intitled, *A History of the Origin of Trade and Commerce*, it is very curiously and ingeniously traced to the creation of the world; as the wants and necessities of the inhabitants of the globe increased after the fall of our first parents so did trade, being then only a system of barter or truck of the superfluities of one individual for those of another. The extension of trade and commerce with foreign nations is very properly ascribed to the invention of the compass, which of course the French claim the merit of about the year of our Lord 1200, resting their more particular claim to that invention from the *fleur de lis*, wherewith all nations still distinguish the north point of the card but numerous historians are induced to give the credit thereof to the Chinese, and what confirms their conjectures is, that the compass was for a considerable time used in Europe in the same manner as the Chinese do at this present time; that is, they let it float on a little piece of Cork instead of suspending it on a pivot. But we cannot so readily agee with the date of their invention, being no less than 1120 years before the christian æra. As trade became more extensive and general, the inhabitants had then more wants, and this introduced the medium of *money*, which may be justly reckoned the greatest evil of all human invention. And we remember to have read a tract, maintaining that in length of time money would be so common (perhaps paper money) that this medium would be discarded, and that the inhabitants of the globe could not enjoy genuine peace and happiness, until their wants were also diminished to those simple necessaries requisite only in the primitive ages. This we remember the author compares to the second childhood of the world, previous to its entire dissolution, and a resurrection of the life. This doctrine appears conformable to the rules and orders of the Moravians, who on a small scale live and exist within themselves; but to all present appearance a general dissemination of their tenets is not very near at hand. Yet we have a curious specimen of the original system of *barter* in the paper of the Morning Post of the 13th ult. although it is evident the advertiser is not one of the *Moravian brethren* from *Fulneck*.

Advt. "*Bowyer's History of England* in numbers, to be exchanged for *Madeira* or Port *wine*, in cask or in bottle, of the best and in proportionate quality; also prints of the Death of General Wolf, Battle of the Boyne, &c. on the same terms, &c." A.

SIR,

AT page 488 of your former Volume you inserted the beginning of the Plan of Mr. Farish's Lectures; I send you herewith an extract, which concludes the first part. I am, &c.

[*Metals and Minerals concluded.*]

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Coining.
Milling.
93. Gold beaten into leaves.
94. Gilding.
95. *Mixed Metals.*
96. The specific gravity,
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97. Art of soldering.
98. Pewter.
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100. Cock metal.
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102. Specula.
103. *Brass.*
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106. Brass manufactured into various articles.
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107. *Coal.*
108. Boring for coal.
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109. Examination of the strata.
110. The strata thrown up or down.
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114. The coal gin.
115. The steam wimsey,
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116. Corfs.
117. Coal waggons.
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119. Contrivances for loading vessels with coal.
120. Works at Whitehaven,
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125. The different strata.
126. Works at Ashford in Derbysh.
127. Mills for sawing,
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And polishing marble.
128. Stone quarries.
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129. Machines used in Masonry.
130. Architecture.
131. Slate quarries.
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135. Tarras or puzzolana.
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143. *Flints,*
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144. Pottery.
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145. Potter's wheel.
146. Potter's lathe.
147. Moulding and modelling.
148. The squeezing box.
149. Burning in the kiln.
150. Painting,
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And glazing porcelain.
151. The use of flints in the manufacture of glass.
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152. Structure of the pots,
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153. Glass blown,
And formed.
154. Of annealing glass.
155. The manufacture of plate glass.
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156. Cut glass.
157. Glass made for optical purposes.
158. Grinding optical glasses.
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161. *Of Saline Minerals,*
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166. Sea salt.
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167. Different kinds of salt.
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168. The bittern or mother water.
169. Extraction of glauber,
And Epsom salts from the bittern.
170. Magnesia.
171. Nitre,
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Obtained from decayed buildings.
172. Modern discoveries relative to it's formation.
173. Purification of nitre.
174. Gunpowder.
175. The mill for mixing the ingredients.
176. The corning mill.
177. The glazing tackle or shamping mill.
178. On the strength of various kinds of gunpowder.
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179. Gunnery.
180. Sulphur.
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181. The sulphuric or vitriolic acid.
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182. Concentration of the acid.
183. Acids from nitre and sea salt.
184. The manufacture of alum.
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COAL MINES AT AIX-LA-CHAPELLE.

TO THE EDITOR OF THE TRADESMAN, OR COMMERCIAL MAGAZINE.

A LEAGUE and a half east from Aix-la-Chapelle, many beds and veins of coal have been formerly wrought by different individuals, but only to a trifling depth, when they are obliged to abandon them by the abundance of water. As these coals were a great convenience to the city, the magistrates have determined to resume the workings at the public expence. They have found it necessary first to drain the mine, and have erected for this purpose a hydraulic machine; which has been attended with great expence, as it was necessary to cut a very long canal to convey water to turn it. They have sunk two pits; one where they have constructed the machine, the other upon the principal vein, which is almost perpendicular, as are all the rest which are parrallel to it. It inclines to the north, and has its direction from east to west. It is said that towards the north there are not less than forty veins, at twelve or fifteen fathoms from each other; but of which the greater number are not workable, being not more than one, or two feet thick. They reckon in this country that they should not be less than three to bear the expence, or at least that they should be pretty near the surface. The principal one, which is at present working, at the depth of thirty fathoms, is four, five, six, and even seven feet thick.

South from this vein, and about fifty fathoms from its wall, (*pavement, or trading side,*) another bed is working, which is much more inclined. It dips three feet in six, which is very different from the other beds, since these are, as we have said, nearly perpendicular. This is from five to five feet and a half thick.

In sinking to the coal, they go through a species of very hard gritstone, which can only be wrought by blasting. This lies in beds which have the same direction and inclination as the coal, but quite broken, so that it readily detaches itself on all sides, but especially in a direction opposite to that of the vein.

Below the gritstone, which is very thick, is found a black, very hard earth, which has the appearance of rock, many feet thick. This forms the roof of the coal; the wall (or pavement) is another hardened earth, but brighter, and more smooth; they often contain impressions of plants; exposed to the air, they soften, and fall in pieces.

This coal contains very little or no bitumen; it is very sulphureous, and therefore not fit for the smiths; but it is of the best quality for apartments and kitchens, since it gives no smoke or smell. It is the same

species that is called *culm*, and *craw coal* in the North of England, or as that which is wrought at St. Simphorien de Lay, in Upper Beaujolois; at least it is like them in its appearance and qualities: at Aix it is called *clutin*. They burn it in grates; forming first a range of large pieces upon small wood, and afterwards heaping up balls of a composition of five parts coal-dust and two parts clay to give them a consistence.*.

COAL MINES IN WESTPHALIA.

Four leagues from the city of Rhene is the village of Ypenbure on the road to Osnaburg. Half a league from this village are the coal mines which supplies the salt works. These mines were not at work when we passed by them; but they were employed at other mines, about two leagues further on the same road. As we leave the village of Ypenbure, we ascend a mountain, at different heights of which are quarries of flag-stones, out of which they get large pieces for paving; exactly resembling those which are found over and all round the coal mines of Newcastle in England. North of this mountain runs a valley, and beyond that another mountain, where they work the coal mines we first mentioned.

Those which are two leagues farther are surrounded by the former kind of rock; and it is thought that they are only an extension of the same bed of coal. The place where they are situated is called Schaffenberg; it belongs to the king of Prussia, who works on his own account both these and the former mines. As they have hitherto met with only one bed of coal in each, they conjecture that the same bed runs through the whole country. They are at present working at the depth of 200 feet: the bed has a small inclination from west to east, which is indeed the case with the mountain itself. They have driven a level at the bottom to the length of 400 fathoms, which drains off all the water which is met with in the bed above the aforesaid depth.

The bed is commonly two foot and a half thick of good coal, which appears indeed to be of an excellent quality, though there are some pieces in which laminæ of pyrites may be perceived: the extraction of this bed is facilitated by another above it, composed of a black earth, intermixed with small pieces of coal, but of which they make no account: This bed is a foot and a half, two, and sometimes three feet thick, and it is extracted first, in order to have the coal afterwards very pure.

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* This is perhaps the origin of count Rumford's fire balls. Ed.

The roof of the upper bed is a stratum of six, eight or ten inches of closely united gravel, forming together a pretty hard stone; above that is the freestone arranged in beds of flags, which easily separate from each other.

Thirty men are employed in working the mines, under the direction of a master miner. By a comparison of the measure and price upon the spot, we supposed they might be worth 8 or 10 *sous* the quintal, French money.

ANSWERS TO QUERIES ON CURING OF MEAT.

TO THE EDITOR OF THE TRADESMAN, OR COMMERCIAL MAGAZINE.

SIR, *Bristol, July 21st*, 1809.

THE liberal manner in which many of your correspondents have come forward to explain the various secrets of their trades, must be pleasing to every generous mind, and has an ample claim to our warmest thanks. The more education spreads her benign influence on the various classes of the community, the more will those narrow ideas disappear, which for ages have been the obstacles to that prosperity, the enjoyment of which, no honest man ought to envy his neighbour. Monopoly of any nature is disgraceful, but I condemn that above all, which impedes improvements in arts and trades. The different ways of acquiring property, have, in many men, roused their most inventive faculties; and may it not be said to their highest credit, they have, particularly in this country raised manufactures to such perfection, as justly to gain the admiration of the world. Much has been done, but much more might be done, to render their memory immortal, and to draw down upon them and their posterity, the blessings of the less rich, but equally industrious trader or artist, were they a little more communicative. As your valuable publication is open to all, it is to be hoped it may be read by those who have the good of their fellow man at heart, and are disposed kindly to share with him through the channel of the Tradesman, that information, which by dint of study and application they have acquired, but which good men will not withhold from society.

Having read some queries in your thirteenth number of the Tradesman concerning the curing of meat, I thought proper to answer them according to my best knowledge, and if I am not successful enough in doing good, I am sure I shall do no harm.

1st. English beef and pork I must allow are superior to Irish; but the parsimonious use of animal food of the Irish will enable them to supply other markets with greater quantities than what we can do from England. A second reason is, the high duty we pay here for salt, and the low price of the same article in Ireland. Though the government allows a drawback on English salted provisions for exportation at the rate of five shillings per barrel, yet the mode of obtaining it, with the attendant expences for bond, &c. and the too frequent ill humour and imperious conduct of the officers are such as will never compensate a Tradesman for the loss of time he experiences by the tedious execution of a law intended for the benefit of commerce and as a stimulus to industry.

2d. The art of curing is not confined to Ireland alone, nor will provisions put up in Ireland keep longer in foreign climates than English. I have been eighteen years engaged in the curing of provisions in general, and particularly for the West Indies. I have made experiments, by keeping English beef and pork for two years in casks, even exposed to the summer's sun, and found it at the expiration of that time in excellent condition. I have sent several casks the voyage to Jamaica and back again, and found it perfectly good. Therefore I cannot allow any particular secret to our Irish neighbours, but what we are in full possession of on this side of the channel.

3d. The salt is immaterial. I have used the common Droitwich salt with great success; but as there are several refineries of the Liverpool rocksalt established in Bristol, I have of late years given the preference to my fellow-citizens.

4th. Hams, and all other dry provisions eat better after a voyage to the West Indies than they do here, merely on account of the fermentation they undergo by a long voyage. This fermentation extracts those superfluous particles of salt which they imbibe in the curing, makes the meat eat shorter, and gives it that flavour which many ham-eaters so much admire. Thus far I have answered the questions of your West Indian friend; but should you deem the following worth your insertion, it may, perhaps, be found useful to young tradesmen, as well as private housekeepers. I stated before, that I had been eighteen years in this trade, which I still follow to a considerable extent, and shall give a faithful account of my method of curing the various sorts of provisions for home consumption as well as for exportation.

Beef and pork are cured in the following proportion: To one hundred and twelve pounds of beef or pork, take ten pounds of salt, and half a pound of saltpetre. Let your meat be well cleared of those par-

ticles of blood which will hang about it when cut into four pound pieces; this is best done by washing it in salt and water, or any weak offal pickle, provided it be sweet. Lay your meat in rows, and rub the upper side moderately with salt, then lay another layer of meat, and repeat the operation as on the first layer; and in this manner continue the same proportion of salt and saltpetre, till you have the quantity you wish to cure, all heaped up in a tub, or some other vessel (not of lead) in order to preserve the pickle issuing from it. In this state it must remain for three days, then turn it into another tub, sprinkling it with salt as you turn it; when all is turned, let the pickle procured by the first salting, be gently poured about the meat. In this state let it remain for a week, and it will be excellent for home use. Should it be wanted for exportation, pack it in this state into such casks as your order may express. But as the greatest care for its keeping good abroad consists in the packing, you must first put a layer of salt in your barrel, then a layer of meat packed very close, (with your hands only) and in this manner the cask must be filled up. When headed, you must carefully filter your pickle through a coarse cloth (not boil it) and when perfectly fine, fill up your cask by the bung-hole. In this state let it remain till the next day, in order to observe whether your cask be tight or not, then bung it up, and I have never found myself deceived in one single instance, in its keeping any reasonable length of time. The too great rubbing of meat will not keep it the better, it frequently retards the operation of the salt by filling the outward pores of the meat only to the destruction of the middle of the piece, which frequently perishes. The simpler the mode the safer.

Pork, hung-beef, tongues, and mutton hams, are, in my factory, cured in the following manner: The proportion of salt as before, with the addition only of one pound instead of half a pound of saltpetre. Put your hams, &c. to soak in salt and water over night, in order to open the pores of the meat, by extracting the coagulated blood and other viscid juices still retained therein. The next day rub them gently with your salt and saltpetre; then place them in a tub one upon another till they are all salted; repeat the same every day for one week. By that time they will have drawn a sufficiency of pickle to cover one half the number you may have salted. Mix with this pickle (let us suppose drawn from twenty-four hams) one quarter of a pound of sal ammoniac pounded very fine, and one pound of clean Muscovado sugar, well worked with a stick for a few minutes; in order to incorporate it with the pickle, pour it gently over your hams and turn them every second day for fourteen days, at the expiration of which time, take them out,

wash them, and hang them up in a drying house, keep them for one week drying without smoak. Then make a fire of oak timber, which must be covered three parts over with oak sawdust, mixed with juniper berries, and damped with water. In this state you may keep them in the drying house from one to eight days. According to this method, and in the above mentioned proportions, I cure from two, to three hundred hams, and great quantities of hung-beef and tongues per week, during the season, and am happy to assert, that the goods so cured, give satisfaction both at home and abroad.

As hams, beef, and tongues, hung up only the time above mentioned are not dry enough for use, they must then be hung up in a room moderately warm or in a current of air, and when perfectly dry, pack them up in a box or cask in the following manner. A layer of hams and a layer of malt dust about three inches thick, till you have packed all. Let them remain in it, which will prevent the small Hopper fly during the summer season, and will, in the course of six weeks produce a fermentation which will make your hams completely hot, in so much, that the fat becomes transparent. As soon as you find this to be the case, take them out of the package, put them in bags, and hang them up for use, and they will have that flavour your correspondent makes mention of.

You have now, Mr. Editor, my method, but am still ready to listen to further improvement, provided the ingredients are not composed of treacle and pepper, and such like things, which do not give any flavour; besides being very expensive, and will not keep the pickle as sweet and clear as the use of only salt and saltpetre.

The place assigned for the curing of provisions, ought to have a current of air, which is as essential as the salt they are cured with.

I am, Sir, your's,

FREDERICK.

METHOD OF MAKING LEAD VARNISH.

TO THE EDITOR OF THE TRADESMAN, OR COMMERCIAL MAGAZINE.

London, 6th July, 1809.

THE method of making the lead varnish, which you enquire after, I will endeavour to describe as well as I can. I believe the proportions are an ounce of red lead to a quart of linseed oil, but I am not quite sure, as it is a great while since I used any of it. It may be only a pint to an ounce, but experiment will ascertain that.

Take an iron ladle, and suppose 2 ounces of red lead and about half

a pint of linseed oil, put it over the fire, stirring the materials all the time. As it grows hot towards boiling, it will grow of a browner colour; a little after that, when it comes to a proper point of heat, it will very suddenly take to bubbling, blistering, and fuming at a furious rate, and be very apt to catch fire, which may be extinguished by putting a cloth or board over it, and taking it from off the fire; after this, it will become almost black and very dingy; if you let it cool in the ladle, it will become as hard and as brittle as glass; if you then superadd the remainder of the oil, it will dissolve and mix up altogether with a moderate degree of heat, much short of boiling. You may make it more or less thick by putting less or more oil. Keep it stirring about, and now and then drop a little upon a tile, and you will judge whether the thickness be such as you like. It should be made in an iron ladle or iron pot out of doors, for it makes a most insufferable stench, and is very apt to catch fire and to boil and blister over.

Official Return of the Imports and Exports of Great Britain for the last three Years, ending 5th January 1809, as presented to Parliament in June 1809.

IMPORTS.

N. B.—The real Value are calculated on average. Estimate of three Years, so as to preserve the Comparison of one Year with another.

ARTICLES.	1807.	1808.	1809.
	£.	£.	£.
Almonds	42,334	50,789	58,315
Annatto	74,033	72,249	13,341
Ashes, Pearl and Pot	135,965	279,941	214,079
Barilla	122,067	141,710	359,468
Bark	66,098	69,607	2652
Berries, Juniper	6,074	7677	5663
Brimstone	82,456	135,273	124,317
Bristles	112,532	87,902	34,786
Butter and Cheese	417,833	378,846	436,443
Cochineal	133,291	202,843	266,297
Cocoa	50,438	75,008	131,182
Coffee	3,015,969	2,402,823	4,176,847
Copper	71,343	173,130	194,379
Cork	27,268	30,703	30,694
Corn and Meal	1,106,540	1,878,521	330,958
Currants	135,379	156,928	200,241
Elephants' Teeth	47,668	51,997	68,650
Feathers	42,375	36,775	3826
Figs	25,717	18,779	16,295
Fish	126,880	194,993	351,502
Flax	1,009,812	1,187,306	618,307
Gum Arabic	22,695	34,025	37,803

ARTICLES.	1807.	1808.	1809.
	£	£	£
Gum Senegal	52,542	39,045	29,639
Hats, Chip and Straw	26,693	19,282	5,622
Hemp	1,732,114	1,786,857	611,760
Hides, Raw	463,388	365,932	439,182
—— Tanned	33,107	12,134	19,629
Indigo	152,063	342,955	174,852
Iron	610,432	450,890	399,005
Isinglass	102,822	60,537	6891
Lace	59,025	8,602	2051
Lemon and Oranges	119,620	67,964	91,052
Linen Cambrics	63,311	56,188	3,744
—— Canvass	67,338	42,660	5,295
—— German	179,818	142,981	46,837
—— Russia	186,691	202,706	39,581
Madder	74,489	176,918	173,543
Oil, Olives	164,618	82 807	169,566
-- Sallad	10,804	17,445	8,980
--- Train	752,398	696,058	721,907
Pimento	87,953	73,757	14,764
Pitch and Tar	189,455	194,665	154,974
Quicksilver	91,722	119,687	11,477
Raisins	191,289	103,740	251,113
Seeds, Clover	180,021	180,266	79,617
—— Flax and Linseed	240,379	334,659	144,305
Shumac	75,415	41,561	60,636
Silk, Raw and Thrown	1,122,022	711,242	343,901
Skins	542,259	477,976	414,770
Smalts	60,152	26,194	25,772
Spirits, Brandy	494,006	953,441	478,182
—— Geneva	106,644	102,457	130,148
—— Rum	446,937	561,213	748,053
Succus Liquoritie	14,341	8,152	16,734
Sugar	6,734,149	6,283,321	6,580,638
Tallow	1,253,346	859,045	324,413
Tobacco	423,923	454,169	146,137
Turpentine	101,546	78,551	23,686
Wax, Bees	42,729	38,889	38,336
Whale-fins	11,911	28,320	14,516
Wine	2,169,303	2,396,939	2,861,297
Wood	2,817,694	3,121,014	1,327,187
Wool, Cotton	4,688,063	6,054,402	3,195,314
—— Sheeps	1,029,759	1,846,442	357,023
Yarn	695,401	367,624	65,870
All other Articles	1,321,402	1,209,249	1,580,312
	36,989,141	38,677,810	30,190,459
Irish Produce and Manufac.	6,485,119	6,785,274	7,978,910
East India Produce	7,147,447	8,037,906	7,549,329
Total Imports £	50,621,707	53,500,990	45,718,698

Signed, W. IRVING, Inspector General of Imports and Exports, Custom-House.

The above table of the *real* value of all imports into Great Britain will furnish much curious matter for observation of the situation of our foreign trade, and enable us to form a just notion of the commercial transactions of our country. From this it appears that the imports for 1807 amounted to 50,621,727*l.* but from this should be deducted all Irish produce and manufacture, which ought rather to be described as goods carried coastwise, and merely as articles moved from one part of the kingdom to another. This would leave the amount of the imports 44,136,588*l.* It also appears that the imports from Ireland in 1808 increased from 6,485,119*l.* to 6,785,274*l.* so that Ireland was far from being cramped in her trade with Great Britain; and again, in 1809, we find her trade still further increased, being 7,978,910*l.* being an increase in two years of about 1,493,791*l.* In the year 1809, there appears a very considerable decrease in the total amount of imports, being no less than a diminution of 9,075,923*l.* being about four times as much decrease in value of goods brought from foreign parts, as of goods sent to foreign parts. For every guinea therefore, which the continent has withheld from the British nation, they have prevented themselves from receiving four times as much. To understand what country has most severely felt this defalcation, we must consult the tables for the article, and enquire from whence that commodity was supplied. Anatto, for instance, has fallen off from 74 and 72 to 13, which must be felt by the country from whence that drug is imported; the difference being nearly five-sixths of the whole import. Oak bark is reduced from 69 and 66 to 2, being a proportion of about 30 to 1. We cannot pass without remarking the comparative import of corn and meal, because great apprehensions of scarcity were entertained when the detention of corn and flour from America was first promulgated. The import, which in 1808 was 1,878,521*l.* in 1809 was only 330,958*l.* being considerably under one-fifth part of the former, yet our markets have shown no symptoms of want, although it cannot be denied but the price has been somewhat higher. The manufactured articles of foreign parts have been diminished also: Straw hats from 26 and 19 to 5. Isinglass from 102 to 6. Linen cambrics from 63 and 56 to 3, and Hessem from 67 and 42 to 5. The diminution of these articles of manufacture has been the means of causing a much greater consumption of English articles to supply their place, which is particularly observable in our British linen and callicoes. Many other diminutions of articles which are either not necessaries of life or for which substitutes may be easily raised, and probably now raising among us, will easily be observed by the reader.

But there are other articles which have increased in spite of all restrictions. Barilla from 122 to 259. Cochineal from 133 to 266. Cortex Peruvianus from 54 to 176, and Salt fish from 126 to 351, with several other articles. It is most probable that it would be found on inquiry, that those very countries which have prohibited British goods, are the same as those from which Britain has received those smaller quantities of goods; so that their edicts might with propriety enough, be called Prohibitions of their own Commerce. To this we may add, that it is not likely that those places can have sent to other parts additional quantities beyond their customary demand, to compensate for the loss of British purchasers. With respect to the decrease of American produce, the importation of which, was deemed of such singular importance, even that Great Britain could not exist without them, but this assertion required several qualifications: knowledge of the stock on hand, and the length of time for which it might suffice: the proportion exported to other parts; this being no longer exported augmented the quantity applicable to home consumption: and the supply that might be obtained from other channels. These considerations, together with others, have contributed to moderate those alarms, which some were too ready to indulge. The principal articles we received from America were cotton wool, linseed, lumber, fish, and provisions of various descriptions. It appears, that at least one-half of the cotton wool received into England was exported in the state of yarn or other partly manufactured form, to the Continent of Europe; the Continent therefore would be deprived of its accustomed supply, rather than England, by the importation of this commodity in its raw state being stopped. The embargo acted also as a relief to the great stock already on hand, and to the accumulation of India goods of a like description, which was immense, and selling at prices below the import cost. Our colonies in North America have supplied much timber, and will supply more, also fish, flour, pork, and other articles. The following observation made by Lord Sheffield, in a work lately published by him, on the Orders in Council, and relative to the fear that was entertained that Jamaica and our other settlements in the West Indies, would be much straightened for want of the usual supply from North America.

"Jamaica has been so well supplied with flour through our remaining colonies, that of one thousand barrels shipped to that Island from hence, about six months ago, instead of 20,000 which were ordered under the expectation of a deficient supply from America, less than one half had been with difficulty sold in December last, under prime cost. Flour has even been cheaper at Kingston than at Philadelphia. The

American States cannot prevent the supply of flour and other provisions in small coasting vessels, through the British North American Colonies. Flour, pork, beef, butter, and cheese, are now smuggled into these provinces in vessels from 14 tons and upwards; the numerous islands in the bay of Fundy, the numerous ports in those waters, only a few hours sail from each other, the means of meeting on Nantucket shoals, and at the uninhabited island in Penobscot bay, where they shift their cargoes, and render the prevention of this illicit trade by armed vessels or any other means, absolutely impossible. Not a vessel of any description leaves an American port that does not contrive to carry away some flour."

If such were the resources in spite of the most strict and rigorous embargo on the Continent, and during which, such considerable supplies of corn, tobacco, linseed, provisions, &c. arrived even in foreign bottoms in England, particularly at the port of Liverpool, (vide our monthly return of arrivals at that port in our second volume) what must be the relative situation of our trade now completely open with America?

[*The official Return of Exports will be given in our next.*]

ON THE PRIVILEGES OF LONDON FREEMEN IN OTHER PORTS.

TO THE EDITOR OF THE TRADESMAN, OR COMMERCIAL MAGAZINE.

SIR,

IN your last Magazine, page 26, I have observed an Inquiry signed O, "On the Rights and Privileges of London Freemen in other Ports," will you oblige me so far as insert the following copy of the freedom as given in London to the freemen of that corporation, from which it appears that *all* freemen of the city of London are *exempt in every other port in the British dominions* from a variety of corporation charges, and that, as your correspondent observes, "the declaration of this right passes over their ears as words of course," he might have added and *even as the oaths of corporation officers do over theirs.* What strengthens my opinion that a London freeman has the privileges mentioned in the following document is, that towards the latter part of page 61 of your former volume, we are informed, "that prior to a trial at York in 1793, between Leighton (meaning Sir William Leighton) plaintiff, and Watson the water bailiff of the corporation of Newcastle-upon-Tyne, defendant; the corporation (of Newcastle) received amongst other tolls, of London freemen 3*d.* per Newcastle chaldron

(nearly double that of London) on all coals exported, and 5*d.* per chaldron from non-freemen. Since that time they (that is the corporation of Newcastle) HAVE RECEIVED NOTHING FROM LONDON FREEMEN, and only 2*d.* from non-freemen."

The following is a copy of the paper I allude to above.

I am, Your's, &c. L.

COPY OF THE FREEDOM OF LONDON.

To all to whom these presents shall come, We, John ———, lord mayor of the city of London, and the aldermen of the said city, send greeting. Know ye, that amongst other the liberties, free customs, and privileges by the charters of the late kings Henry the Second, Henry the Third, Edward the Third, and other kings of England, to the citizens of the city aforesaid granted, and by the authority of divers parliaments ratified, approved, and confirmed, it appeareth that all the citizens of London and their goods *are or ought to be quit and free from all toll, lastage, passage, package, portage, pavage, and murage through the whole realm of England and the parts of the sea, and through the whole dominions of the same, as well on this side as beyond the seas,* and through the ports of the sea as well on this side as beyond the seas; and that if any man shall take any toll or custom of the citizens of London, the citizens of London may take of the borough or town where any toll or other custom shall be taken as much as the said citizens have given for toll, and are thereby damnified. And that if any man within the realm of England, or in any of the dominions of the said kings on this side or beyond the seas, or in any of the ports of the sea on this side or beyond the seas, shall take any toll or other custom of the citizens of London, the sheriffs of the said city of London for default of justice in that behalf their goods may take at London; and also that the said citizens through the whole realm and dominions aforesaid, freely and without any lett of the said kings, or any of their officers or ministers, as well by sea as by land, concerning their goods and merchandizes in any place or port, may traffic and do their business as to them shall seem good, *quit of all custom, toll, or pavage;* and also may abide in any place within the said realm for doing their said business as in time past they have been accustomed to do; and further, it is forbidden upon forfeiture, that none should presume from thenceforth to molest or otherwise disquiet or vex the said citizens contrary to the liberties to them as aforesaid granted.

Wherefore we pray and friendly entreat you, in the behalf of who is a citizen and freemen of this city, that you will not in enywise molest him in his person nor in his goods, nor as much as you are able to suffer the same to be done by any others, and that if you have taken any thing from the said his attorney, factor, assignee, or any of them, you make thereof restitution unto him, his attorney, factor, or assignee, or some of them, without delay, according to justice, least we, for want of justice on your part, to be performed, should be urged to inflict the penalties of the charters aforesaid on you or some of you, or to prosecute some other hard course against you, which we hope you will in your wisdom prevent.

In witness whereof the said lord mayor and aldermen of the said city of London have caused the seal of the office of mayoralty of the said city to be affixed to these presents.

L. S. Dated at London the day of in the year of our Lord one thousand hundred and and in the year of the reign of our sovereign lord George the Third, by the grace of God king of Great Britain, France, and Ireland, defender of the faith, &c.

RIX.

P. S. We are told at page 41 of your last volume, that twenty-five other towns are almost similarly privileged with London. Perhaps some of your correspondents can inform me which they are, and why they have been so favoured.

NOTE IN REPLY TO QUERIES ON SALTING MEAT.

TO THE EDITOR OF THE TRADESMAN, OR COMMERCIAL MAGAZINE.

SIR, *London, July 17th*, 1809.

I OBSERVE in your last number some queries by "a West Indian," on the best way of salting meat: the following account of that subject from the debates of the House of Commons on the 30th May last, on the duties of salt, will perhaps, in some degree reply to his queries. Should I obtain any other information on the subject I shall forward it to your valuable repository. I must however explain two terms before I proceed to the quotation: by common salt, I mean that which is ob-

tained by artificial evaporation; and by bay salt, is meant that crystallized by exposure to the sun; this was first practised in the bay of St. Ubes, in Portugal; from whence its appellation of *Bay* salt.

"The common salt, we are informed by an Irish member, is employed only prior to the packing of the beef, the bay salt is used in the packing; thus both are employed, but for different purposes, or at least in different branches of the art of salting beef: the British salt is not used in packing the beef, because having undergone the process of boiling, it is apt in warm countries to melt and slip from between the interstices of the beef, and thus fail in the object of keeping it. The Irish beef has obtained its character of keeping so well in various parts of the world from the bay salt with which it had been cured."

In this I would beg leave to add the following:——Ireland is not the only place *very* famous for pickled pork; Aberdeen enjoys a considerable reputation in that line. I extract the following from some of my late "readings:"

Aberdeen is famous for its pickled pork, sold particularly to the Dutch, in times of peace, for victualling their East India shipping. The pork there having the reputation of being the best cured in Europe, for long voyages. As an answer to your correspondent's fourth query, I have to observe, that the sea voyage, has in a great degree, the same effect on the pickle or brine, and consequently through it on the provision, as it has on liquor of any kind, a degree of fermentation is induced, which not only keeps the salt, &c. continually afloat in the pickle, but alters its very nature in some degree, as cream is altered in the motion of churning.

Your's &c. E.

IRON COCKS FOR LARGE RESERVOIRS,

Made by MARTIN CAWOOD and SON, Leeds Foundry, Yorkshire, at nearly One-Half of the Expence of common Brass ones, and with many very superior Advantages of Strength and Durability.

Instead of casting the cocks entirely of brass, as is customary, the patent cocks are formed of cast iron, and those parts of the piston and cylinder which come in contact, are covered with hard bell metal, which is properly united by the adhesion of tinning and soldering, or brazing, being by these means formed into one compact solid body.

Observations extracted from the Repertory of Arts, for July, 1806, *page* 98—99.

"The common composition for brass cocks, which is made of copper and lead, is found by experience not adapted to bear the extremes of heated steam and a cold and frosty atmosphere. The copper being saturated with a large proportion of lead, its properties are made tender, and easily susceptible of expansion and contraction by heat or cold, which causes the cocks frequently to burst. The lead also makes the metal cloggy, and by a very small heat will strike to the surface; consequently a great deal of friction is produced, which very often so fastens the cock that it cannot be turned, or takes away that smoothness which ought to remain in the piston and cylinder, and then the cock is useless, not being air-tight. Cocks, plated as above specified, are not liable to these objections, as it is universally allowed by all engineers, that good soft iron is found to stand better than any other metal the extremes of heat and cold; hence steam cylinders and hot water pumps for engines are now made wholly of that metal. The metal also with which the piston and cylinder of these cocks are plated, being of small weight, the patentee can afford to make it of such superior quality, that the objections made against common cock-metal cannot apply to his mixture, which is made of bell-metal, wherein no lead is used. Common cocks when out of repair are in general sold as old metal; for when they are ground two or three times, the hole in the piston is so low in the cylinder that it will not admit a sufficient quantity of fluid equal to the bore of the cock; but in these plated cocks, when the piston is worn too low, (which will rarely be the case, owing to the superior quality and hardness of the metal which comes in contact when in use) the piston or cylinder can be plated at a trifling expence, and the cocks rendered as good as new: this in large cocks, for which this invention is more especially adapted, will be a very great saving."

An Extract from the Sixth Number of the Retrospect of Philosophical, Mechanical, Chemical and Agricultural Discoveries.

"We agree in the statement made in the Repertory of Arts, respecting Mr. Cawood's method of manufacturing cocks, that they will be much less liable to burst from change of temperature than common cocks, will wear longer, can be more easily repaired when worn, and be sold for nearly one-half of the price of cocks of the usual construction."

ON BREWING HOME MADE ALE, &c. WITH A RECEIPT FOR THE HOOPING COUGH.

TO THE EDITOR OF THE TRADESMAN, OR COMMERCIAL MAGAZINE.

SIR, *London, 26th July*, 1809.

I HAVE often heard that home brewed ale, &c. is much cheaper, better, and more wholesome, than the liquor we generally get of the common brewer; I should suppose your Magazine would circulate among families who brew their own liquor, and that some of these would be willing to favour me with their process. Will you, sir, favour me with a corner for this enquiry, and you will oblige

YOUR CONSTANT READER.

P. S. I beg leave to offer the following Receipt for the Hooping Cough, which I have frequently administered, with I think invariable success. Perhaps some parents may thank me for the trouble I take in copying it. I can assure your readers not only from what I know of its success in other families, but also in that of my own, that it is safe, easy, and expeditious.

Dissolve one scruple of salt of tartar in half-a-pint (English) of water, and ten grains of cochineal finely powdered, sweeten this with sugar. Give an infant the fourth part of a table-spoonful, four times a day, and from four years old and upwards a spoonful might be given, the relief is immediate, and the cure generally in three or four days.

PROVINCIAL OCCURRENCES AND MISCELLANEOUS INFORMATION.

Portsmouth—Intended supply of Water. An act has lately passed the legislature for supplying the town of Portsmouth and Portsea with Water. These populous towns have been hitherto supplied by carts from wells in the vicinity. It is now intended to do away this nuisance occasioned by so many carts constantly plying; and instead of this inconvenient method, to sink one or more wells in a field called the White Swan field, near the fortifications, and by erecting reservoirs, and laying down pipes to convey the water from thence into the two towns, the field being near the wells from which the inhabitants are principally supplied at present, no doubt is entertained by those acquainted with the geology

of the place, that an ample supply of water will be afforded. The wells in present use are not more than 15 or 20 feet in depth, and the water obtained from them, though somewhat hard, is as pure and bright as spring water, in general; but it has been found that by sinking and boring to a greater depth, that the water is not only preferable, being perfectly free from the quality of hardness, and of course purer, but also in greater abundance. The strata under which these springs lie are as follow: Vegetable mould, 1ft. 6in. brick loam, 4ft. 6in. course gravel, 6ft. finer gravel and sand, 6ft. and lastly, blue clay or marl, terminated by a quick sand in which are the springs, from the depth of 60 to 160 feet. It is therefore intended to excavate through the blue clay, and by stopping out the upper springs, to supply the town from the under spring alone. The capital raised for the undertaking is 40,000l. in 50l. shares, the estimated expence being about 32,000l.

As a farther improvement of these populous towns, Portsmouth contains, according to the census taken by government in 1801, 1200 houses, and 7839 inhabitants; and Portsea 4180 houses, and 24,327 inhabitants, exclusive of the army, navy, and marines, constantly residing in that district, being an additional population of at least 10,000, and when there must necessarily be a great number of poor and indigent children, and although there are many excellent institutions for education, yet they are inadequate; it is therefore in contemplation to open a subscription for the purpose of obtaining the means of erecting a school on the plan of Dr. Bell and Mr. Lancaster, capable of educating at least 400 poor children and defraying all expences attending the same.

Portsmouth—Improved Manufactures. A very material saving has been discovered for the preparation of hammock cloth for the royal navy. Not only is the paint by a very simple and cheap process recovered from the old cloths, but it is found that this paint mixes better with train oil, than with any other. It unites not only the advantages of cheapness but keeps the cloths constantly moist and pliable.

A manufactory for lamp black is also erecting in the naval yard for the calcination of the bones brought up in immense quantities by the oyster trawlers of Spithead. The saving in this article alone will be very important.

Yorkshire—Discovery of a Mine of Zinc Ore has been made on Lord Ribblesdale's estate in Craven, where there were formerly copper mines. This ore has been used as a substitute for white lead in painting, the colour of which, it attains by long exposure: it does not blister, is more adhesive and is not decomposed by salt water. This mineral is found in strata at the bottom of caverns, about 8 fathoms from the surface, in

some places 6 feet thick; one of the caverns is 104 yards, another 84, and a third 40 yards in length, and about 14 yards wide. His lordship supposes this mineral has been sublimed by a volcano, as the stones surrounding it have been vitrified. About 2000 tons of it has been sold at from 5l. to 10l. per ton, to make brass when mixed with copper, exclusive of what has been used for painting. If this discovery should be followed by others of a like kind, so that there should be a full supply of the mineral, and it should be found to answer the purpose required, it is possible that the use of white lead as paint, with its deleterious effects in preparation and use, may be to a great measure superseded.

Northumberland—New Iron Rail Way. On the 15th May the inhabitants of Alnwick and its neighbourhood were gratified by the completion of the metal rail road for the conveyance of coals from the Shilbottle colliery by waggons. The immense sums annually paid for this indispensible necessary of life, have long been severely felt, and of late years have produced the effect of almost depriving the poorer classes of the community of so essential a comfort. Coals have lately been sold to the consumer at the exorbitant rate of two guineas a Newcastle chaldron, (a price unexampled in any other part of the county) nearly one half of which was charged for cartage. The rail road passes invariably through the ground of the duke of Northumberland, the proprietor of the mine; and by its judicious direction the distance is only three miles from the colliery to the staith. Coals have already considerably fallen in price, and the whole of this spirited and laudable undertaking has been planned and executed by and at the sole expence of Mr. John Taylor, thelessee of Shilbottle colliery.

Yorkshire and Lancashire—Junction of the Leeds and Liverpool Canal. The respective proprietors of the duke of Bridgewater's canal and of the Leeds and Liverpool canal, have agreed to unite the two, by extending the Leeds and Liverpool from Wigan to Leeds; and the moment parliament authorises the junction, the work will commence. There are only seven miles to cut, which space we are told is almost one continued bed of excellent pit and canal coal.

City of York—Plan for the Improvement of the Ouse Bridge. The mayor and commonalty of York have offered the following rewards to such architects, engineers, and builders, &c. as shall on or before the 2d day of August, give, in the opinion of the said corporation, the best plan for carrying into execution the intended improvement of Ouse bridge, by widening it according to the section of the present arches, and for making the new foundation and abutment; together with an

estimate of the expence: viz. for the most approved plan 100l. for the second 60l. and for the third 40l.

Kent—Intended New Bridge at King's Ferry into the Isle of Sheppey. It is in contemplation to apply to parliament early next session for an act to build a bridge over the Swale at the King's ferry, near the village Twade, in order to facilitate a more safe and speedy communication with the Isle of Sheppey, being on the main road to Queenborough. A full meeting has been held at Sheerness on the subject, which will be farther discussed and the plan arranged at another meeting to be recently held.

Dorsetshire—Improvements at Lyme. The inhabitants of this town have entered into a subscription for the improvement of this fashionable watering place. A wall is began which is to extend from the town to the harbour. There will be a gravel walk and shrubbery extending full a mile; and the hot and cold baths have undergone some judicious alterations.

New Method of detecting Arsenic. The test which Mr. Joseph Hume proposes as a substitute for those hitherto used, appears to be more efficacious, inasmuch as it produces a more copious precipitate from a given quantity of that substance. It is composed in the following manner: Let one grain of white oxide of arsenic and the same quantity of carbonate of soda be dissolved by boiling in 10 or 12 ounces of distilled water, which ought to be done in a glass vessel; to this let a small quantity of the nitrate of silver be added, and a bright yellow precipitate will instantly appear. This is a more decisive test than sulphate of copper, which forms Scheele's green (arseniate of copper) and though the process answers very well with potash or lime water, yet Mr. Hume is inclined to prefer the common sub-carbonate of soda.

Country Bank Notes. The multiplicity of country bank paper now in circulation should cause the trading interests to be particularly cautious as to what bills they receive, or ere long some will probably have to regret their misplaced confidence. We have reason to believe that a system of depredation has been some time carried on by a set of swindlers, who open pretended banks in different places, and when they have issued as many notes as they can force into circulation, shut up shop and decamp. Were no bills to be taken but such as are known to belong to banks of established reputation, the public could not suffer, but so long as an indiscriminate circulation of paper from almost every quarter of the kingdom, be so generally encouraged, so long will the risk of loss continue.

New Machine for making Paper. From the Moniteur we learn, that a report has been made from the Society of Agriculture and Commerce of Caen, that a Mons. Gabriel D'Esetable has lately presented to them specimens of a manufacture of paper from straw, by means of an instrument so simple in its construction, that any person who pleases may make paper equal to the most practised workman; however this scheme of straw paper has not as yet succeeded in England: from the many daily improvements in trade and manufacture which we witness, that to past ages would have appeared next to wonder or impossibilities, the genius of necessity more particularly abroad, may soon bring this desirable object to perfection, and we shall take an early opportunity of giving our readers a full explanation of the foreign process here alluded to.

Account of Vessels and Cargoes trading to Riga within the last year. The following account is taken from the Hague Courant of 4th July, and exhibits a grand view of the relative trade of Britain thus compared with that of other countries, viz:

No. of vessels arrived from foreign ports	226
from Russian Ports	58
	284

Departures.

To foreign Ports	225
To Russian Ports	62
	287

Value of Imports.	Rubles.	Value of Imports.	Rubles.
From England	788,246	From Lubeck	41,821
France	387,441	Bremen	354,380
Holland	317,510	Sweden	17,000
Spain	75,254	Denmark	547,222
Portugal	619,342	America	234,890
		Total	4,800,651

Application of Steam Engines for Weaving. Toward the close of the

session of parliament a motion was put and agreed to, for granting 10,000l. to Dr. Edward Cartwright, for applying the use of steam engines to the working of looms. It appeared from the Report of Mr. Banks, the chairman of the committee, that although this gentleman made a very useful discovery, and for which he obtained his majesty's letters patent, it was not for that alone he obtained remuneration, but that in the year 1792, the weavers rose and destroyed all his apparatus, in consequence of which it was alleged, the government was deficient in protecting his property, and for this the sum was granted. It appeared also, from the Report of the Committee on the case, that great advantage had arisen from the invention, and that the Dr. had expended 30,000l. in bringing it to perfection.

Beer Brewed in London during the last 12 Months. According to the returns of the first twelve houses in the London Brewery, from the 5th July 1808, to 5th July 1809, the quantity of barrels brewed appears to be

Barclay, Perkins, & Co.	205,328	Coombe & Co.	75,551
Meux, Reads, & Co	150,105	Goodwin, Skinner, & Co.	60,233
Truman and Hanbury	130,846	Elliott & Co.	45,608
Brown and Parry	114,001	H. Meux & Co.	40,663
Whitbread & Co.	100,275	—— Taylor	40,007
Felix Calvert, & Co.	90,385	J. Calvert & Co.	29,155

The following is also the state of ale brewed in the London district by the six principal houses during the same period.

	Barrels.		Barrels.
Stretton	23,125	Goding	11,158
Charrington	17,935	Hale	9,196
Begbie	12,519	Webb	8,247

COMMERCIAL REPORT.

Foreign Retrospect.

BRAZILS. By recent accounts from the Brazils we learn that an intercourse with the Spanish settlements was expected, which had been so strongly opposed for centuries, both by the letter and spirit of their laws. All goods, excepting brandy, wine, vinegar, beer, and oil, pay a duty of 24 per cent. *ad valorem.* The course of exchange was from 73 to 75. Sugar, at 1400 reals per arrobe; coffee, 2240;

tobacco, 2700; tallow, the same price; and the article of rice, 3840 per quintal, a quintal being equal to 129 and 4-10ths lb. English. The following is an extract of a letter from thence, dated 8th April: "Rice is very dear, notwithstanding the fresh crop is coming to "market very fast; the increase of population, and newly raised "troops, consume a vast quantity more than heretofore, and the "planters had not reckoned upon such an increased consumption; "but now they will cultivate it in abundance, for generally when "any article is particularly low they neglect it entirely. At Santo, "a small port, about 100 leagues to the southward, rice is in greater "abundance than here." Tobacco is seldom or never exported from hence, excepting to Africa and Pernambucco. Batria supplied the mother country, the quantity grown there being considerable, and the quality generally good. Here it is very bad, except what comes from the neighbourhood of Mapendi, from whence some good cotton is brought in serons, and fetches nearly as good a price as Pernambucco: that produced here is very bad. From the establishment of the court here, and the natural effect of a certain degree of spirit and emulation that the inhabitants of this part of the world have caught since the arrival of so many Europeans, and tempted by the cheapness and variety of the goods brought by the English for sale, the trade of the country has so much increased, and the purchasers from the interior are more numerous, and make larger investments than formerly.

The price of produce at the Brazils is very fluctuating: tallow in general has been bought and shipped for England at from 2400 to 2800 per arroba; mitria skins are also brought to Rio Janeiro from the river Plata, and sell at about 2400 per dozen, and horse-hair at 2600 per arroba; ox horns at 2200 per hundred.

The articles most in consumption and taken in large quantities are, bays, colours, blue, red-rose, and flesh, Sweedish iron and steel, common hats, square and round sheets of copper for braziers' use, cheese and butter, cloths, particularly low blue ones, at about 4s. per yard, coatings, olives and browns, kerseymeres mostly low priced, cotton goods of all kinds, but particularly muslin, in all the varieties of the article; laces, veils, shawls, prints, shirting, and quilting for waistcoats, men's plain white cotton stockings, with embroidered and plain clocks, and all lace clocks for women; hardware, nails of all kinds, and generally every thing that has been and used to be shipped for Lisbon; German window glass, and German linens, such as platillas, bretanas, buanes, olandas, &c. The price of cod-fish, oil and butter, vary very

much as is usual in all Catholic countries; the former article, at the date of April, would fetch 10,000 reals per quintal at least, and oil 20,000 reals per pipe. Butter, however, which, some months ago, sold at 1600 reals per pound, at the same date fetched only 200 reals to the maker, and at which time there was a great abundance. Sugars sold very readily, at 1400 per arroba, and coffee at 1240.

France. The director of the customs at Paris has addressed a circular to the Chambers of Commerce, at the different French ports, of which the following is a copy:—

"The Emperor has by a special decree authorized the minister of the interior to grant licences to foreign vessels to export the produce of our territory, and to import in return, timber for ship-building; hemp, masts, and iron from the north; also, Peruvian bark, and other drugs; the vessel so licensed must, on clearing outward, be laden with the following articles only: Wines, brandies, liquors, dried and preserved fruits, pickles, corn, and salt; on their return to our ports, they must import no description whatever of colonial produce or merchandize except as before; for should the articles be even of a description admissible in ordinary circumstances, they will in the present case be totally prohibited. The licences will have the effect of exempting the vessels therewith provided from the extraordinary regulations of the customs, and of confining the examination to be made on their return to the ascertainment of the description of the commodities which are above specified, and whereof the importation is permitted, and this without rendering the captains responsible in any other respect."

Holland. It does not appear that there is any intention on the part of the French and Dutch governments to relax in the execution of their severe commercial decrees, which is particularly shewn by the following answer which was recently given in Holland to a petition for leave to discharge some American ships:—

"The director of public concerns on the river informs Mr. ———, that in conformity with his Majesty's orders, his petition touching the American ships, cannot be complied with; that, although it afflicts his Majesty to be under the necessity of obstructing commerce in order to avoid greater inconvenience, he cannot revoke the existing orders." All American ships laden with goods which are allowed to be imported will be admitted; but should their cargoes consist of colonial produce, though they should even come from Dutch colonies, they must be deposited in the King's warehouses until peace takes place, or wait the event of more favourable circumstances or times.

Another decree of 30th June, is as follows:—

"Article 1. The list of articles allowed to be imported by the act of 31st March, shall be extended to the following: rice, staves, barks and other drugs, and in medicine; cottons, Georgia, Louisiana, and Carolina; Java coffee, and sugar from the same island.

"2. Besides the certificates of origin required by our former decree, the director afloat for the means for executing the same shall appoint sworn brokers to examine the goods, to ascertain if they really are the produce of our colonies, or of the United States; and for the better means of examination, all goods shall be landed in the King's warehouses.

"3. A month from the date hereof, our said director shall report to us whether it be advisable to continue these measures."

West Indies. By letters from the Bahamas, we are informed that Col. Browne, from St. Vincent, the late Superintendant-general of the Indian nation has presented a memorial stating, that a quantity of aloe, hemp, pitch, tar, and turpentine, may be manufactured in the Bahama islands, equal to the consumption of all the navy and merchantmen of the kingdom of Great Britain; this is a matter of so important a nature, as it respects our naval interest, that we hope every encouragement will be given to the Bahama planters to furnish these articles, under the uncertainty of supply from the Baltic and the United States.

The duties at the Havannah are as follows (although the arrangement is quite concluded, it is not yet publicly notified by the Cabildo):—Flour in American vessels, 10 dollars; in Spanish, 6 dollars; rice, hemp, hog's lard, and the various kinds of pulse and vegetables, in American vessels, 50 per cent.; and in Spanish, 30 per cent. All kinds of linen and silk goods, 22 per cent., and municipal duties instead of 36 per cent.; cotton and woollen goods, 15 per cent., and municipal duties instead 36 per cent. Deposits of all kinds of produce of the United States are liable only to 1 per cent. and the municipal duty.

America. From the most recent papers, and letters received from New York, and other parts of America, we learn that the temporary ferment, excited by the intelligence from this country, has at length in part subsided; and the language of the different journalists is now at least temperate, if not friendly. Trade has begun to revive at New York, and many vessels were loading for Europe. An American sloop of war was ordered to sail for the Texel, where she is to be stationed for the purpose of informing American vessels at what port of Holland, or the north of

Europe they may land their cargoes in safety. This was considered as auguring an acquiescence in the late measures of the British government respecting neutrals.

Domestic.

Since our last, the following ships have arrived from the East Indies, under convoy of the Culloden: the Sir Stephen Lushington, William Pitt, Hugh Inglis, Earl St. Vincent, Harriett, Sir W. Bensley, Sovereign, Huddart, Indus, Northumberland, Euphrates, and Lord Eldon; together with a number of whalers, and have brought home very valuable cargoes. There are also arrived upwards of 100 vessels from the West Indies. Numerous arrivals have this month come from America to the ports of Liverpool and Hull, and the quantity of cotton wool, tobacco, and flax-seed, which they have brought, have materially affected the prices of those articles in the different markets.

In return, very extensive orders have been received by many of our manufacturing towns, for a supply of British goods for the American markets; and, notwithstanding the repeated croakings of the disaffected, of Mr. Erskine's having exceeded the limits of his powers, and hinting that government will not ratify his negociation, we have every reason to believe that the commerce between the two countries will continue to be carried on, on the most amicable footing, and without any interruption whatever.

The price of grain has looked up notwithstanding the general appearance of the present crops are allowed, in most districts, to promise far better than for the last two or three seasons. At the recent Welsh fairs, the quantity of wool brought to market has been very considerable. Ryland crossed with the Spanish, averaged from 45s. to 50s. per stone; fine Herefordshire, from 34s. to 42s. per stone; and Welsh, 18s. to 28s. Coarse middling wool had a very heavy sale, and scarcely fetched last years' prices, and many lots at the different sales have remained unsold.

By turning to our table of imports will be seen a large arrival of *rags* to the London markets, and this has had a considerable effect upon the price of paper, it having already experienced a fall of 5s. per ream, and expected still lower.

Soap and candles may also be expected much lower, from the great quantities of tallow imported lately from the Brazils; and most of the raw materials for our different manufactures have already decreased in price, and are looking lower; from the many arrivals from America and the West Indies, cotton has experienced a considerable fall in the

Liverpool market; rice is also lower 12s. per cwt.; hemp 15s. per ton; tallow 10s. per cwt.

Agricultural Report.

The wheats never looked better, or promised a more productive crop than they do at present. Barley, the crops in general heavy and very good. Oats sown on the turf very deficient. Hay first mown has been much damaged by the great quantity of wet which has fell at the commencement of the month; though upon the whole it has suffered much less than could have been expected, owing to the extreme coldness of the season when it fell. Turnips have been less affected with the fly than usual, and plant remarkably well: the hoeing of them in general is recommencing. Wool, upon the advance since the shearing. Hops are not half a crop.

MONTHLY RETROSPECT.

Domestic Affairs.

DURING the last month, the public attention has been directed principally to the great naval and military armament, for which such active preparations have been making for several weeks past. In addition to the brief notice in our Retrospect for July, our readers may be gratified by the following more authentic particulars respecting the intended expedition:

It appears highly probable, that several days will still elapse before the whole of our very formidable force starts from all the points where it is collected. Including the marines, who are to act with the army, it will amount to at least 50,000 men. Besides, there will be about 40 sail of the line, and about 200 sail of fighting vessels of one description or the other. We understand, that the present period of delay is not allowed to pass unimproved, for that nine corps from Scotland, Ireland, and every quarter of this kingdom, are collecting with all speed, to be sent off, if possible, with the expedition, that the blow may be a decisive one. The corps proceeding are:

The royal Artillery, about 3,700...Ditto Engineers...Ditto Staff corps...Ditto Waggon Train...8d, or Heavy Dragoons...9th, Lord Rosslyn's...12th, Prince of Wales's...1st and 2d Regiments of German Light Dragoons...A Brigade of Foot Guards...1st Foot, or Scots Royals, 3d Battalion,...2d, or Queen's Regiment...4th, Lord Chatham's 1st and 2d Battalions, 5th...6th, 1st and 2d Battalions...8th, or King's Own...9th, 11th, 14th, 20th...23d, or Welch Fuzileers...26th, or

Cameronians ..28th, 31st, 32d, 35th, 36th, 38th...42d, or Royal Highlanders...43d, 50th...51st, Light Infantry Regiment...52d, 59th, 63d....68th Light Infantry Regiment...71st Higlanders, Light Infantry...76th Ditto, 77th...79th, or Cameron Highlanders...81st, 82d, 84th, 85th...91st, Argyle Highlanders...92d, Gordon Highlanders...95th Riflemen...Several Regiments of the King's German Legion...Colonel Cochrane's Corps, composed of the 78th, or Ross-shire Highlanders, and other Corps, 900 strong...Besides a Brigade of Marines, Corps of Sea Fencibles, Sailors on shore, Volunteers, &c.

One million of ball cartridges, with 13 more fire-ships (making in the total 49 ships of this nature), were last week added to the former preparations; and instead of 104 pieces, there are upwards of 300 pieces of heavy ordinance, besides light artillery embarked. The enemy have at Flushing a number of ships of the line, &c. and the general conjecture that that place will be attacked, is much strengthened, by a part of the transports in the Downs having masts and rigging on board.

The military command in chief has been confided to lieutenant-general the earl of Chatham, and sir Home Popham is intrusted with the executive part of the naval flotilla, in which he will be assisted by the local knowledge of all the Trinity and other pilots acquainted with the navigation of the Scheldt. Flushing, and the Isle of Walcheren are supposed to be the object of attack. Lord Mulgrave, Mr. Canning, and several of the lords of the Admiralty are on board the navy yacht in the Downs, to witness its sailing.

The following is a correct list of lieut.-gen. the earl of Chatham's personal staff:—*To be Aides de Camp,* Major Bradford, 11th Foot; Hon. capt. Gardner, R. A.; capt. Haddon, 6th Dragoons; major Linsingen, 1st. Light Dragoons, K. G. L.; capt. Falla, 25th Foot; major lord C. Manners, and capt. lord R. Manners, to be extra Aides-de-Camp; lieut-col. Carey, 3d Foot Guards, to be military secretary.

The embarkation of troops, horses, stores, and every necessary, is now completed. The transports sailed from Ramsgate for the Downs on Thursday, and ships were pouring into the Downs all day. The wind being foul on Friday, the troops did not sail from Spithead.

The river fencibles, including those of Deptford and Greenwich, have in consequence of an intimation from lord Mulgrave to the commander, volunteered their services, and all the pilots acquainted with certain coasts are engaged. The same bounty of 50s. as well as the same allowances which were granted to this valuable body of men for their services at Copenhagen, is to be granted them on the present occasion.

From India we learn, that the Company's forces have succeeded in repressing several of the petty sovereigns, and that the once formidable lines of Travancore have been successfully stormed by a detachment under the command of major Walsh.—According to concurrent and authentic accounts from the West of India, the once formidable and enterprising Jeswunt Rao Holkar has been for some time past afflicted with insanity. At times he cannot recognize even the members of his family; and on other occasions, he is said to exhibit signs of the most dangerous and uncontroulable insanity. His Sirdars are already beginning to effect their independence. This branch of the Mahratta Empire must speedily sink into obscurity.

FOREIGN AFFAIRS.

Considerable anxiety prevailed respecting the issue of the important battles between the emperor of Austria and Bonaparte. A series of Bulletins from the 23d to 26th inclusive, has been received, which announced the continued successes of the French forces. The fortress of Raab, in Hungary has fallen into their hands, and Presburg has nearly been destroyed by bomdardment; but the most important intelligence is, that respecting the defeat of the Archduke Charles, after two days desperate fighting, on the 5th and 6th of July, at Enzersdorff and Wagram; the particulars of these engagements are too numerous to be detailed here: and as most, if not all, of our readers are probably apprized of them, we shall only observe and state from the 25th Bulletin, that the Austrian army, cut off from Hungary and Moravia, had on the 7th instant been forced to fall back upon Bohemia. The Bulletin then states, that in these tremendous conflicts, from 3 to 400,000 men, and from 12 to 1500 pieces of cannon were incessantly engaged. Ten pair of colours, 40 pieces of cannon, 20,000 prisoners, including between 3 and 400 officers, and a considerable number of generals, colonels, and majors, are the trophies of this victory.

The Bulletin then concludes with stating, that the result of this battle will be to reduce the Austrian army to 60,000 men: the loss of the French is *estimated* at 1500 killed, and 3 or 4000 wounded!! Generals Wrede, Seras, Grenier, Vignolle, Sahuc, Frere, and Defrance, were wounded; and general Lasalle killed. The inhabitants of Vienna beheld the battle from the turrets, the steeples, the roofs of houses, and other elevated situations. The emperor of Austria left Wolkersdorff on the 6th, and had a view of the field of battle from a tower. The French head-quarters were transferred to Wolkersdorff on the 7th. The 26th Bulletin states that 12,000 of the enemy's wounded have

been picked up, and 6000 more found in the hospitals. The Duke De Rivoli had arrived at Kollabrunn; the Duke of Ragusa, on the 10th, at Znaim; and the Duke of Auerstadt, at Nicolsburg. The Emperor of Austria, Prince Anthony, with a suit of about 200 chariots, &c. left Znaim on the morning of the 8th.

Further reports have been circulated that the Austrian army had been overtaken in their retreat, and compelled to surrender; and that the Archduke Charles was among the prisoners. These rumours, however, appear to be as unfounded as those which prevailed in the ministerial circles, that the losses of the Austrians in the battles of Entzersdorff and Wagram had been grossly misrepresented. That the Austrians have suffered a severe defeat, there can be no doubt: they fought under circumstances peculiarly favourable; and their defeat, we fear, will tend to confirm the power of Napoleon, and to check that spirit of resistance which had begun to manifest itself throughout Germany. But still we cannot think that the fate of Austria is decided—that she must necessarily implore the mercy of the conqueror, because she has been driven from the left bank of the Danube to the left bank of the Peya.—After the battle of Ratisbon, the French bulletins announced that the Austrian army was annihilated, and hinted that the Austrian monarchy was at an end. Yet the glorious battle of Aspern succeeded, and that army which, was said to have been annihilated, gave dreadful proofs of its existence to the enemy.—We repeat, therefore, that while Bohemia and Moravia, which contain many fortified places, and admirable positions for a retreating army, and the greater part of Hungary remain untouched, the fate of Austria is not decided; but she has still a chance of combating successfully for her independence.

As the armies under the command of the Archdukes Ferdinand and John, are not mentioned in the bulletins, we may infer that they had no share in the engagement. The force under the Archduke Charles is admitted by the enemy to exceed 60,000: but we should rather compute it at 100,000, especially as the bulletin acknowledges it was 160,000 before the 6th, and does not afterwards account for the deficiency.

The important town of Cuxhaven has been captured by a small squadron under the command of Captain Goate; from whose account we extract the following particulars: "I proceeded", says Captain G. "up this river, (the Elbe), with his majesty's vessels named in the margin*, and anchored out of gun-shot of the battery at Cuxhaven,

* Musquito (sloop), Briseis, Ephira, Bruizer (gun-vessel), Centinel, Blazer, Pincher, Basilisk, Patriot (schuyt), Alert (cutter).

on the 7th inst. and as it was too strong to be attacked by his majesty's vessels, I was determined on landing and taking it by storm, having previously made the necessary preparations for that purpose. At daylight on the morning of the 8th, I disembarked with captain Watts, of the Ephira, and the commanding officers, seamen, and marines, of the respective vessels; the first boats that landed were fired upon by the enemy's advanced posts, and they then retreated to the battery we marched on to storm; but from our appearance the enemy thought proper to retreat, about 80 in number, so that we took the battery (which had six guns, 24-pounders, and surrounded by a wet ditch) without opposition; his majesty's colours were then hoisted on the French flag-staff, and afterwards those of Hamburgh on the castle of Kitzbuttle; we then dismounted the guns, and put them on board vessels lying in the harbour, as well as several other small pieces of cannon, with all the shot and military stores. The battery was then undermined, and, by a variety of explosions, blown up. I then gave the town of Cuxhaven in trust to the civil governor, and embarked all the seamen and marines. Two French gun-boats, with two guns each, which were lying in the harbour, were also taken possession of. Although we did not meet with the opposition that was expected (as the French had sometimes had 500 men, at other times about 100 at Cuxhaven), yet I think it my duty to inform you of the activity and good conduct of the commanders, commanding officers, seamen, and marines, on this occasion, as it was partly from their regularity in forming and marching, that induced the enemy to retreat. Captain Pettett, of the Briseis, commanded afloat, and got that vessel under weigh to assist, had it been necessary."

From Russia and Sweden few particulars have transpired. In Spain and Portugal the patriot forces continue their active exertions. From recent dispatches we learn that Sir Arthur Wellesley has effected a junction with general Cuesta; and the united British and Spanish army was proceeding towards Madrid. Cuesta's army consisted of 20,000 infantry, and 6000 cavalry; the whole of whom were in high spirits.

America. Mr. Dana has presented a bill to Congress, to suppress an abuse, that has been one of the principal causes of dispute with the American Government, viz. the fraudulent protections obtained by foreigners in the character of American seamen. Mr. Dana has also proposed, to require security of the Masters of American vessels, that they will not attempt to enter any port declared to be in a state of blockade.

Letters from Rotterdam mention, that General Armstrong, on the part of the Government of the United States, had arranged with

the Minister at Paris a Commercial Treaty, the conditions of which were all agreed and determined: and it remained only for the ratification of the Ruler of France and the American President.

Eighteen thousand French inhabitants, who were obliged to quit the Spanish settlements, have obtained permission from the American government, to land at New Orleans.

The Governor of Quebec, as appears by a speech delivered by him in the month of May last, has prorogued the Provincial Parliament, with a view to its immediate dissolution. He speaks his mind very ingenuously to the House; and tells them, that instead of furthering the public business, their time has been occupied in personal animosities and useless discussions on measures, the principles of which had been long fixed and acknowledged. He dismisses them to their constituents, to defend their conduct in the best way they can.

BANKRUPTS.

Bankrupts between the 20th of June and 20th of July, 1809.

BANKRUPTCIES.

(The Solicitors' Names are between Parentheses.)

ATKIN John, Norwood, Dealer in Cattle. (Messrs. Collett and Wimburn, Chancery lane.

Bickford John, Brigham, Devon. (Mr. Ballachy, Capel court, Bartholomew lane.

Bolton James Richard, John-street, Adelphi, wine merchant. (Mr. Hannam, Piazza, Covent garden.

Brockbank Thomas, Daniel Wilson, John Gillespie, and Jonathan Tayler, Maryport, Cumberland, cotton manufacturers. (Mr. Thompson, Workington, Cumberland, and Mr. Bacon, Southampton street, Strand.

Brodie Oswald, South Shields, Durham, cordwainer. (Mr. Bainbridge, Shields, and Bell and Brodrick, Bow lane, Cheapside.

Butterworth Joseph, Abchurch lane, broker. (Mr. Druce, Billiter square.

Collyer J. Bolton, Lancaster, cotton manufacturer. (Messrs. Foulkes and Longdill, Gray's inn.

Cook James, Bristol, looking glass manufacturer. (Mr. Batsford, Jamaica row, Bermondsey.

Cogan Thomas, Houndsditch, Stationer. (Messrs. Wiltshire and Bolton, Old bread street.

Coulson S. T. and J. K. Corder, Lynn, Norfolk, seedsmen. (Mr. James, White Hon street, Islington.

Crush William, Chelmsford, upholsterer. (Mr. Adam, Old jewry.

Davis James, Holborn, trunk maker. (Mr. S. Sydnell, Aldersgate street.

Dewhurst John, Halifax, York, grocer. (Mr. Stead, Halifax, and Mr. Hodgson, Surry street, Strand.

Dodds John, Aldersgate street, goldsmith. (Messrs. Higden and Sym, Currier's hall.

Downs Robert Jeffery, Maid lane, Southwark, baker. (Messrs. Field and Sheargold, Clifford's inn.

Dunnage Samuel, St. Paul's churchyard, trunk maker. (Mr. Hall, Coleman street.

Dunster T. Somerton, Somerset, plumber and glazier. (Messrs. Pearson, Pump court, Temple.

Farmer James, Hougham, Lincoln, dealer and Chapman. (Mr. Woodcock, Mansfield, and Blacklock and Co. Elm court temple.

Fennel Isaac, Bath, marble mason. (Mr. Jacobs, Bristol, and Mr. Gabell, Lincoln's inn.

Forrest James, King street, Westminster, baker. (Mr. Richardson, Bury street, St. James's.

Fuller J. J. Yoxford, Suffolk, shopkeeper. (Messrs. Hanrott and Metcalf, Lincoln's inn, New square.

Geddes Alexander, Fenchurch buildings, merchant. (Messrs. Swaine, Stevens, and Co. Old jury.

Gibson Gow, Liverpool, pipe maker. (Mr. Avlorn, Hanover street, Liverpool.

Gray John, Newcastle, merchant. (Mr. Thomas Carr, Newcastle, and Mr. Grey, Gray's inn square.

Hamill William, Chepstow, money scrivener. (Mr. Stoke, Chepstow, and Price and Williams, Lincoln's inn.

Harris Edward, Guilston square, Whitechapel, stationer. (Mr. C. Harman, Wine office court, Fleet street.

Hawke Thomas, jun. Great Yarmouth, Norfolk, millwright. (Mr. J. Boyce, Norwich, and Windus and Co. Chancery lane.

Heywood William, and Richard Shaw Heywood, Manchester, linen merchants (Messrs. Duckworth and Co. Manchester.

Heywood John, Manchester, baker. (Mr Hewitt, Manchester, and Mr. Ellis, Chancery lane.

Holland Peter, Leftwich, Chester, tanner. (Mr. Baker, Norwich, and Messrs. Leigh and Mason, Bridge street.

Horton Richard, Newport, Salop, timber merchant. (Mr. S. Stanley, Newport, and Baxter and Co. Furnival's inn.

Humphreys Thomas, Cheltenham place, St. George's fields, horse dealer. (Mr. Martin, Vintner's hall, Thames street.

Johnson William, Hertford, coal and corn merchant. (Messrs. Jones and Roche, Covent garden churchyard.

Ireland D. Portsea, tallow chandler. (Messrs. Naylor, Great Newport street, Longacre.

Isaacson John Slee, New road, Wellclose square, money scrivener. (Messrs. Jones and Roche, Covent garden.

Israel Isaac, jun. Gloucester street. Commercial road, linen draper. (Mr. Osbaldeston, Little tower street.

Knight Edward, Horsleydown lane, Surry, lighterman. (Mr. Bruce, Billiter square.

Lake Richard, Plymouth, baker. (Mr. S. Kelly, Plymouth, and Twynam and Walker, Inner temple.

Lay William, Duval's lane, Middlesex, victualler. (Mr. Robinson, Charter house square.

Lines J. Upper queen street, Rotherhithe, smith. (Mr Robinson, Prospect row, Bermondsey.

Machill Hockley Arthur, Wickwar, Gloucester, cheese factor. (Mr. James, Gray's inn square, and Messrs. Rolph and Co. Thornbury.

Macullock Andrew, Grosvenor street, Middlesex, navy agent. (George Evel, Chapel street, Bedford row.

Manning Robert, Stock exchange, stock broker. (Messrs. Nethersole and Co. Essex street.

Martin William, Homerton, broker. (Mr. Dose, Gray's inn square.

Matthews William, Brown's Lane, Spittalfields, carpenter and builder. (Mr. Williams, jun. Royal exchange.

Milliken Thomas, Fenchurch buildings, merchant. (Messrs. Swaine, Stevens, and Co. Old jury.

Moody Charles, Tidpit, Wilts, maister. (Mr. Hobding, Salisbury, and Messrs. Milletts, Terrace, Gray's inn lane.

Morris J. Chepstow, Monmouth, shopkeeper. (Mr. Platt, Tanfield lane, temple.

Neale Thomas, St. Martin's lane, dealer in spirituous liquors. (Mr. Robinson, Charter house square.

Norris Phillip, Liverpool, iron merchant. (Messrs. Cooper and Low, Southampton buildings, Chancery lane.

Oddy S. A. and H. Oxford street, booksellers. (Messrs. Wiltshire and Bolton, Old Broad street.

Parsons John and William Daniel, Saint Martin's lane, hair merchants. (Mr. Cunningham, North street, Red lion square.

Pick Richard, Wakefield, York, grocer. (Mr. Scholefield, Norbury, and Messrs. Sykes and Noles, New inn.

Porter T. jun. Corsham, Wilts, clothier. (Messrs. Prowd and Blandford. Temple.

Rock John, Westmoreland buildings, Aldersgate street, tailor. (Mr. Lee, 3, Crown court, Southwark.

Russell W. Liverpool, merchant. (Messrs. Cooper and Lowe, Southampton buildings, Chancery lane.

Scott John Davis, South Cadbury, Somerset, jobber. (Mr. Harvey, Lamb's conduit place.

Seaborne George, Hoxton, sacking manufacturer. (Mr. Harding, Primrose street, Bishopsgate street.

Silvester William Robert, Reading, timber merchant. (Messrs. Blandy and Senders, Reading, and Holmes, James street, Bedford row.

Squire William, Leeds, hosier. (Mr. Tottie, Leeds, and Mr. Lambert, Hatton garden.

Stanley William, Manchester, innkeeper. (Mr. Lyon, Gray's inn.

Stainforth Thomas, Sheffield, cutler. (Remington, and Wake, Sheffield, and John Wilson, Greville street, Hatton Garden.

Steedman William, Bramwell buildings, Soho, cabinet maker. (Mr. Willoughby, Clifford's inn.

Stevens John, Yeovil, Somerset, gardener. (Mr. White, Yeovil, and Mr. Blandford, Kingsbench walk.

Stubbs G. Sheffield, edge tool maker. (Messrs. Blagrave and Walter, Symond's inn.

Swaine Robert, Leeds, woolstapler. (Messrs. Lee and Raynal, Leeds, and Sykes and Knowles, New inn.

Swaine Thomas, Birmingham, carrier. (Messrs. Kinderley and Co. Holborn court, Gray's inn, and Messrs. Smith and Co. Birmingham.

Taylor Paul, Sheffield, screw manufacturer. (Messrs. Rimington and Wake, Sheffield, and Wilson, Greville street, Hatton garden.

Thomas George, Fembroke, shopkeeper. (Mr. Tanner, Bristol, and Mr. James, Gray's inn square.

Walsh Frederic Charles, Strand, Chemist and Druggist. (Messrs. J. and R. Richardson, New inn.

CERTIFICATES.

Abbey John and Henry, Leicester, hosiers.

Anderson William, Manchester, builder.

Baillie George and John Jaffray, Finsbury place, merchants.

Barras John, Manchester, manufacturer.

Barnard John Lockart, Shorter's court, Throgmorton street, stock broker.

Beaton Edward and Henry, late of Portsmouth, butchers.

Blakey George, sen. Stepney, ship owner.

Blaze James, Manchester, dealer and chapman.

Blundell James, Lloyd's coffee house, insurance broker.

Bowman John, Water lane, Tower street, brandy merchant.

Bradley Edward, Bromley, baker.

Brown Joseph, Newcastle, saddler, and Brown Jane, Newcastle, saddler.

Chiffence Richard, Salisbury, musical instrument maker.

Chowles John Thomas, Finch lane, painter.

Clarke Richard, Tooley street, dealer.

Coldwell Thomas, Wakefield, dealer and chapman.

Collison Thomas, Southampton row, cabinet maker.

Cotton Sarah and William, Scawby, Lincoln, corn merchants.

Cowshill William, Manchester, stone mason.

Crane Thomas, Preston, Lancaster, ironmonger.

Crowther John, Manchester, cotton spinner.

Denny John, Barbican, stationer.

Dickinson William, Hull, woollen draper.

Earls William, Edmond-street, St. Pancras, dealer.

Finch John Charles, Russell court, Drury lane, tavern keeper.

Gate Joseph, Fleet street, pastry cook.

Gill John, Naburn, York, draper.
Gillespie William, Basinghall street, tailor.
Goulton William, Selby, York, linen draper.
Gray William, St. John street, shoemaker.
Grindrod James, Manchester, cotton merchant.
Hodgson William, Manchester, cotton manufacturer.
Holland John, Newman street, coal merchant.
Heaton Dinah, Michael, John, and William Springfield, Highley, York, cotton twist spinners.
Hoit John, Salford, Lancaster, dyer.
Harrison George, Globe street, Wapping, carpenter.
Hemsley Henry, Coram street, Russell square, baker.
Heslop William, Longacre, man's mercer.
Jackson John, Farnham, Surry, surgeon.
Jefferson Richard, Kingston on Hull, woollen draper.
Johnston John, Holborn hill, linen draper.
Johnson William, and Richard Lewis, Manchester, corn and flour dealers.
Lee Joseph, Islington, timber mercifant.
Lewis John, Old Jury, warehouseman.
Lowe Joseph Edward, Manchester, warehouseman.
Malleys Simeon, Sculcoats, York, merchant.
Miller George, Woolwich, tailor.
Palmer Thomas, Goodge street, Tottenham court road, tailor.
Parsons John, sen, and jun. Endgate hill, booksellers.
Penn Isaac, Leather lane, oil and colourman.
Philcox John, Brighton, carpenter.
Pinder John, Cudworth, Yorkshire, malster.
Pontey William, Sledmere, York, corn factor.
Powell Walter, Lombard street, banker.
Powell Henry John, Uxbridge, builder.
Proctor William, Great Ealing, dealer in hay and straw.
Rayner Esther and John, Medley, Newport, Isle of Wight, corn dealers.
Rayner James Nightingale, Ely Lamb, linen draper.
Roe Thomas, Wolverhampton, druggist.
Romer Joseph, Rosamond street, Clerkenwell, watch jeweller.
Room David Charles, Manchester, brewer.
Row William, St. Peter's quay, Northumberiand, ship builder.
Scott James Henry Alexander, Kings road, Pimlico, nurseryman.
Shee John, Bloomsbury square, wine merchant.
Slade Thomas Moore, Old Bond street, picture dealer.
Smith Thomas, Brandon, Suffolk, wine merchant.
Stewart, Fleet street, printer.
Taylor John, Micklehurst, Chester, cotton spinner.
Tenant Matthew Bailey, Alis street, Goodman's fields, sugar refiner.
Tennant John, Oxford street, wine merchant.
Terry Frederick Inbert, Bowling street, rectifying distiller.
Thomas John, Liverpool, victualler.
Thomson Robert, Southwark, dealer.
Tinney William, Cambridge, surgeon.
Unsworth Edward, Manchester, cotton spinner.
Walker Joseph, East Ardsley, York, malster.
Wall Charles, Frith street, Soho, man's mercer.
Whitmarsh David, Brockenhurst, Hants, shopkeeper.
Young Alexander, and John Bacon, St. Mary hill, London, merchants.
Bolton Thomas, Little Langton, Yorkshire, dealer.
Cox Thomas, Great Yarmouth, Norfolk, corn merchant.
Dumelow John, Hinckley, Leicester, grocer.
Jacobs Jacob, Wentworth street, Whitechapel, glass cutter.
Reyh John Lorenz, Paddington street, Middlesex, musical instrument maker.
Stanley William, Manchester, inn keeper.
Tanner Benjamin, Dartmouth, Devon, ship builder.

BANKRUITCIES ENLARGED.

Gorton Thomas, Manchester, merchant.
Hunteman John, Queen street, Golden square, tailor.
Markham Elizabeth, Honeylane market, London, butcher.
Townroe Richard, Nottingham, malster.
Walker William Francis, Chatham, linen draper.
Wilkie John, Howard street, Strand, navy agent.

DIVIDENDS.

Adams James, Fore street, Cripplegate, victualler, 29 July.
Altham William, Tokenhouse yard, broker, 14 Nov.
Ames J. Swan lane, Rotherhithe, 23 Aug.
Andrews Garrett, Mark lane, ship broker, 25 July.
Atkin W. W. Alcester, Warwick, grocer, 19 Aug.
Atkinson Thomas, Brown's quay, Wapping, wharfinger, 20 July.
Badcock J. Paternoster row, bookseller, 5 Aug.
Bedford Thomas, Grange Moor, York, clothier, 31 July.
Bell Robert, and Robert Hedley, Newcastle, woollen drapers, 21 July.
Blundell Frederick Francis, Coleman street, insurance broker, 5 Aug.
Boorne George, Norwich, draper, 1 Aug.
Brading James, Newport, Isle of Wight, carpenter, 5 Aug.
Brede George, jun. Lime street, fishmonger, 15 July.
Burnand William, Old Bond street, coach maker, 29 July.
Burton Page, Ratcliff, builder, 29 July.
Bury John, Clifton on Team, Worcester, butcher, 22 July.
Calvert Francis, Cleveland street, stable keeper, 22 July.
Castell S. and W. Powell, Lombard street, bankers, 5 Aug.
Cause John, Great Wakering, Essex, shop keeper, 15 July.
Cheap Andrew, and Andrew Longman, New court, Swithin lane, merchants, 18 July.
Chipchan Charles, Bread street, silk mercer, 29 July.
Clarke Richard, White horse lane, Stepney, factor, 18 July.
Cocking John, Tottenham, merchant, 8 July.
Compere Thomas, St. Alban's, grocer, 29 July.

Cooke John Christian, and Thomas Christian Corker, Leadenhall street, linen drapers, 22 July.
Corrie John, Lambeth, brewer, 29 July.
Crumbelholme, Lancaster, grocer, 31 July.
Dann W. J. and B. Bentham, and J. Raikie, Chatham, bankers, 8 Aug.
Delahoyd C. Esher, Surry, rectifying distilier, 29 Aug.
Dewhurst Ralph, Preston, Lancaster, upholsterer, 26 July.
Dodd James, Pall mall, hatter, 29 July.
Dutton J. Burwardley, Chester, cheese factor, 10 Aug.
Flain W. and W. Aust, Cowcross street, brass founders, 22 Aug.
Forshaw Ralph, Burskough, Lancaster, shopkeeper, 29 July.
Francis Frederick, Chiswick, smith, 25 July.
Frank Thomas, Bristol, 25 July.
Fraser Richard, Cateaton street, hosier, 25 July.
Furth J. Bradford, York, merchant, 8 Aug.
Gedge R. C. and A. Hudson, Isleworth, calico printers, 5 Aug.
Geldart Matthew, Manchester, cotton manufacturer, 1 Aug.
German A. and J. Jephson, Nottingham, hosiers, 16 Aug.
Goff Elijah, Wellclose square, coal merchant, 5 Aug.
Gore William, Manchester, warehouseman, 30 Sep
Grant James and Peter, Coleman street, merchants, 15 July.
Gravenor W. Bristol, sugar refiner, 2 Aug.
Guthrie Robert, and Colin Cook, Liverpool, merchants, 29 July.
Ham W. and W. Aust, Cow cross, brass-founders, 22 Aug.
Harrington J. Stoke on Trent, Stafford, manufacturer, 16 Aug.
Haywood H. Ramsgate, butcher, 11 Nov.
Hebert John and George, Grange road, Surry, tanners, 29 July.
Hedley Robert, Newcastle, woollen draper, 30 Sep.
Heeley D. Birmingham, tailor, 8 Aug.
Hetherington Andrew and John Mackie, Drury lane, perfumers, 20 July.
Heywood Henry, Ramsgate, butcher, 22 July.
Holt T. L. Strand, printer, 12 Aug.
Holton Robert, Wooburn, Bucks, malster, 5 Aug.
Hooton S. and S. Rich, Woodstock street, Bond street, merchant tailors, 12 Aug.
Hopkins, W. Lemon street, silk throwster, 26 Aug.
Huthwaite W. Nottingham, mercer, 7 Aug.
Jarman Peter and Thomas, Llanfihangel, Brecon, wool dealers, 29 July.
Joel M. High street, Shoreditch, dealer, 29 July.
Keene David, Aldersgate street, cabinet maker, 18 July.
Kendall Edward, Tabernacle walk, tallow chandler, 8 July.
Kenyon John, sen. and jun. Nicholas lane, brokers, 14 Nov.
Keyte John, Birmingham, builder, 22 July.
Knight Thomas and Samuel, Lancaster, clothiers, 31 July.
Lane James, Cheapside, warehouseman, 14 Nov.
Lane Samuel, Wentworth, Davies street, Berkley square, builder, 22 July.
Lansdown E. Bridgewater, inn keeper, 3 Aug.
Lawrence Richard, New Windsor, Berks, bricklayer, 25 July.
Leet Margaret, Little Russell street, Covent garden, vintner, 29 July.
Lewin John, Gosport, vintner, 28 July.
Lightly John and James Thompson, Upper Thames street, stationers, 15 July.
Lodge W. Liverpool, stone mason, 1 Aug.
Lomas J. Throgmorton street, insurance broker, 12 Aug.
Macdonald Duncan, Threadneedle street, merchant, 5 Aug.
Mansall James and George, Burkinshaw, Sheffield, saw and edge tool manufacturers, 28 July.
Mason Isaac, Deptford bridge, upholsterer, 29 July.
Mayell W. Exeter, jeweller, 5 Aug.
Meucelin J. and Amick, Cheapside, perfumer, 5 Aug. Oct. 31.
Merac T. and L. M. P. Queen street, Cheapside, warehousemen.
Moore John Hamilton, Little Tower hill, chartseller, 18 July.
Morgan John, Conduit street, bookseller, 29 July.
Morgan Joshua, Carmarthen, timber merchant, 26 July.
Morse T. Wood street, Cheapside, factor, 5 Aug.
Naylor R. Chiswell, Essex, merchant, 12 Aug.
Nelson Charles, Brixton, Surry, coal merchant, 5 Aug.
Norris Thomas, Gosport, corn merchant, 28 July.
Ogilvy W. F. Minories, druggist, 31 Oct.
Page John, Bishopsgate street, haberdasher, 5 Aug.
Pearce William, Dover, cordwainer, 29 July.
Penny W. Back lane, Deptford, victualler, 12 Aug.
Perrin Charles Francis Oliver de, Duke street, Manchester square, victualler, 29 July.
Phillips, D. Cambridge street, Golden square, broker, 5 Aug.
Pickwood George, Cloak lane, wine merchant, 29 July.
Poore John, Mill lane, Tooley street, lighterman, 18 July.
Powell Henry John, Uxbridge, builder, 15 July.
Powis Richard, Hanover square, shoeing smith, 20 July.
Pullinger G. and H. Ropley, Hants, woollen draper, 12 Aug.
Richards George, Cornhill, bookseller, 29 July.
Redpath James, Deptford bridge, upholsterer, 25 July.
Roberts David, Trump street, warehouseman, 8 July.
Rosser Edward, Lindfield, Sussex, soap manufacturer, 15 July.
Rushforth James, Chipping Norton, innkeeper, 29 July.
Russel T. Bengeworth, Evesham, saddler, 8 Aug.
Sampson Samuel and Charles Chipchase, Bread street, silk mercers, 29 July.
Savoury George, Southwark, victualler, 29 July.
Sharpe Josiah, Market Deeping, linen draper, 28 Nov.
Simpson Thomas and Nottingham, North-allerton, merchants, 29 July.
Smith J. S. Liverpool, shoemaker, 3 Aug.

Soanes Robert, Mark lane, provision merchant, 14 Nov.
Sowden J. and J. Hodgson, Leeds, oil merchants, 7 Aug.
Stevens R. Percival street, Goswell street, silk thread dyer, Aug. 5.
Stevens T. Bristol, house carpenter, 11 Aug.
Urquhart William, Sion college gardens, merchant, 29 July.
Usborne W. Finsbury square, merchant, 8 Aug.
Vesick William, Midhurst, Sussex, draper, 29 July.
Vincent John, Seething lane, carpenter, 29 July.
Walton William, Liverpool, merchant, 24 July.
Ward William, Leicester, hosier, 25 July.
Ware William, Caldicot, Monmouth, shopkeeper, 21 July.
Watson William, Cambridge street, Hackney road, coach maker, 31 Oct.
Willes J. and C. Hobbs, Whitechapel road distillers, 12 Aug.
Williams W. Park street, Islington, builder, 12 Aug.
Wood James, Lindfield, Sussex, victualler, 22 July.
Wright C. Aldgate, tobacconist, 22 July.
Wright W. Wem, Salop, cornfactor, 9 Aug.

Return of Imports and Exports in the PORT of LONDON, from June 20th, to 20th July, 1809.

IMPORTS.

Barilla, tons	62	Spanish Wool, cwts.	818
Corn Wheat, qrs.	18,060	Madder, cwts.	38,260
—— Barley,	360	Turpentine, Oil of, lbs.	76,500
—— Peas,	2200	Linseed, qrs.	9426
—— Oats,	94,500	Flax, tons	883
Coney Wool, lbs.	2015	Smalts, lbs.	7900
Cotton, bags	18,300	Hemp, tons	2500
Bacon, tons	98	Sugar, casks	12,300
Butter, tons	2740	Oil, Olive, gallons	2600
Cheese, tons	5680	—— Sperma. tons	120
Coffee, bags	35,400	Tobacco, lbs.	320,500
Brandy, pieces	806	Rags, tons	101
Currants, serons	1418	Silk, Raw	32,933
Rum, puncheons	35,900	—— Thrown	25,090
Wine, pipes	11,360	Tallow, tons	1353

IMPORTATION OF RAW AND THROWN SILK.

	RAW. lbs.	THROWN. lbs.		RAW. lbs.	THROWN lbs.
Doxatt & Divett	1810	2550	Siordet and Co.	320	——
J. Vere & Co.	920	3430	H. Maltby	——	250
C & J. P. Robinson	930	600	Haldemand & Sons	1000	1440
M'Cullock and Co.	——	1160	Favene & Son	8300	1230
J. Daubuz	300	——	J. & J. Patteson	3750	270
Princep & Co.	——	480	Martin & Co.	180	——
Gandolfe & Co.	4540	1400	Sapte & Co.	1160	1540
Cazenove & Co.	3380	4880	Simming & Co.	400	——
J. Reid	120	——	J. Heath	——	350
D. L. Pereira	——	760	Goldsmidt & Co.	780	——
M'Donnell and Co.	380	——	Minot & Fector	130	1850
Campbell and Co.	450	——			
Noble and Co.	3000	——	32,930 Raw, and 25,090 Thrown.		
Motteux & Co.	1080	2900			

ACCOUNT OF RAGS IMPORTED DURING THE SAME PERIOD.

	Tons.		Tons.
J. Pistor	4	Bowden and Co.	2
Green and Co.	20	C. Hardess	2
D. Willink	4	G. Paton	5
Simeon and Co.	8	G. H. Garland	8
J. and W. Boyes	9	Atkinson and Son	15
J. Twemlow	12		
Baxter and Co.	10	Total	101
J. T. Scroeder	2		

ACCOUNT OF LINSEED IMPORTED.

	Qrs.		Qrs.
Prest and Co.	290	J. Pistor	6
R. and J. Wilson	1530	Giles and Co.	770
J. C. Ruding	2150	Stammers and Co.	90
Stammers and Co.	30	W. Atkinson	50
W. T. Robinson	350	Bennett and Co.	500
J. L. Gris	500	J. Clarke	100
R. Linder	1500		
C. Cleasby	800	Total	9426
Bagleyhole and Co.	690		
Dickinson and Co.	70		

FLAX IMPORTED.

	Tons.		Tons.
J. L. Gris	70	H. Siffken	5
Campbell and Co.	4	Sharp and Son	10
Finlay and Co.	10	P. Sartoris	5
Cox and Co.	8	G. Todd	20
W. Mitchell	235	E. Gardener and Son	4
Thornton and Co.	59	Mackenzie and Co.	6
J. Rapp	4	Bainbridge and Co.	6
C. Grant	40	P. Forrester	100
G. Duley	110	J. J. Battier	50
Raikes and Co.	20		
A. Kruse	112	Total	883
S. Joseph	5		

SPANISH WOOL IMPORTED.

	Cwt.		Cwt.
Lubbock and Co.	12	Garcias and Co.	30
Boddington and Co.	85	J. P. Hadwin	60
A. Gore	10	Waltham and Co.	114
J. Drinkald	10	J. F. Schroeder	60
Windle and Co.	4	J. Rapp	9
Grigg and Co.	7	Houghton and Co.	70
Milner and Co.	40	H. E. Brook	8
Rottenburg and Co.	3	Pearson and Co.	25
Prieschell and Co.	131		
Robarts and Co.	80	Total	818
Salter and Co.	50		

EXPORTS.

Baize, pieces	4610	—— Beaver, dozens	610
Beer, tons	580	—— Silk, dozens	56
Brandy, pieces	410	Iron, tons	1046
Brass, tons	176	Lead, tons	58
Candles, dozen lbs.	1300	Pepper, cwts.	480
Cochineal, lbs.	8506	Linen, Irish, yards	250,000
Coffee, cwts.	2046	—— Printed, yards	740,000
Cocoa, cwts.	57	Indigo, lbs.	60,200
Cotton Printed, yards	267,000	Soap, cwts.	1830
Cloth Long, yards	1420	Sugar, raw,	31,600
—— Short yards	3760	——, refined,	1100
Copper, tons	346	Salt,	
Raisins, cwts.	340	Sail Cloth, ells	5600
Flannel, yards	38,500	Wines, galls.	96,700
Hats, Felt, dozens	960	Tin, tons	15

COURSE OF EXCHANGE.

	Tuesday, 27 June.	*Tuesday*, 4 July.	*Tuesday*, 11 July.	*Tuesday*, 18 July.
AMSTERDAM, 2 *Us.*	31	31	31 4	31 4
Ditto at sight	30 5	30 5	30 5	30 11
Rotterdam, 2 *Us.*	9 16	9 4	9 16	9 16
Hamburgh, 2½ *Us.*	28 16	28 6	29 6	28 10
Altona, 2 *Us.*	29 7	29 7	29 7	28 11
Paris, 1 day's date	20 1	20 1	20 1	20 1
Ditto, at sight	21 5	20 5	20 5	20 5
Bourdeaux	20 5	20 5	20 5	20 5
Madrid	44	44	44	44
Cadiz	39	39	39	38½
Bilboa	41	41	41	41
Leghorn	57	57	57	57
Genoa	50	50	50	50
Venice	52	52	52	52
Naples	42	42	42	42
Lisbon	63	65	65	67
Oporto	64	64	65	68
Rio Janeiro	67½	67½	67½	67½
Malta	53	53	53	52
Gibraltar	36	36	36	35½
Dublin	9¼	9¼	10	10½
Cork	9¼	9¼	9	11

New Dollars 5*s.* 7*d.* per oz.

The following are the Average Prices of Navigable Canal Shares, Dock, Stock, and Fire Office Shares, in July, 1809, at the Office of Mr. Scott, 28, New Bridge Street London.

The Monmouthshire Canal, 111l. per Share, including the increased half yearly dividend of 3l. per Share.—Grand Junction, 185l. to 187l.—Ellesmere 66l.—Wilts and Berks, 27l.—Basingstoke, 20l.—County Fire Office, 10l. per premium.—Albion Assurance, 56l. per Share.—Atlas, 10 to 5*s.* discount.—Provident Life Institution, 1l. 1*s.* premium.—Rock Life Assurance, 5*s.* premium.—Kent Water Works, 14l. premium.—London Dock, 120l. per cent.

Average Price of Corn throughout England and Wales, taken from the London Gazette, for the Week ending 15th July.

	s.	d.		s.	d.
Wheat	87	11	Pease	55	9
Rye	56	4	Beans	58	11
Barley	43	9	Oats	31	8
Oatmeal	53	10	Beer or Big		

CORN EXCHANGE.---Price of Grain on board of Ship.

Wheat	70	to	75	Boilers	110	—	120
——, fine,	80	—	86	Gray	40	—	48
——, superfine,	87	—	89	Beans, new,	54	—	60
Rye	40	—	48	Ticks	40	—	48
Barley	30	—	38	Oats	34	—	37
——, fine,	38	—	40	Polands	39	—	41
Malt	68	—	76	Fine Flour	75 per sack.		
White Pease	80	—	102				

SMITHFIELD MARKET.

To sink the Offal, per Stone of 8lbs.

Beef	4	4	to	5	8
Mutton	4	8	—	5	6
Veal	5	0	—	6	0
Pork	5	8	—	6	4
Lamb	5	0	—	6	8

NEWGATE AND LEADENHALL.

By the Carcase.

Beef	4	0	to	5	8
Mutton	4	0	—	5	0
Veal	4	0	—	5	10
Pork	5	6	—	6	2
Lamb	4	4	—	6	0

PRICE OF TALLOW, SOAP, AND CANDLES.

	s.	d.		s.	d.
Town tallow, cwt.	89	6	Card	112	0
Yellow Russia	62	0	Store Candles, per doz.	14	6
White	90	0	Mould	15	6
Stuff	68	0	Average price of Tallow, in St. James's and White Chapel Markets, per stone of 8lbs.	5	2½
Yellow soap	98	0			
Mottled	108	0			

PRICE OF HOPS.

Kent, bags,	£4	0	to	5	10	Kent, pockets,	£4	10	to	6	8
Sussex	3	5	—	4	4	Sussex	3	15	—	5	0
Essex	3	15	—	5	0	Essex	7	0	—	8	0

Average Price of Brown or Muscovado Sugar 40*s.* 5*d.*¾ per cwt. exclusive of Customs and Excise payable thereof.---*T. Nettleship, Clerk of the Grocer's Company.*—From London Gazette of 22d July.

HAY AND STRAW.---Per Load.

ST. JAMES'S MARKET.							Clover	£6	16	—	8	0
Hay	£5	15	0	to	6	14	Straw	1	14	—	2	0
Clover	7	0	0	—	—	—	SMITHFIELD.					
Straw	2	3	6	—	2	8	Hay	6	0	—	6	6
WHITECHAPEL.							Clover	7	0	—	7	7
Hay	5	10	0	—	6	16	Straw	1	12	—	2	0

PRICE OF COALS.

Newcastle	44	0	—	60	0	Cinders	37	0	—	—	—
Sunderland	44	6	—	47	6	Other Coals	44	9	—	45	

Delivered at 12*s.* advance on the above prices.

JULY 21st, 1809.

B. signifies Barrel; Bl. Bushel; Ch. Chest; C. 112lb. D. Dozen; G. Gallon; H. 100, and of Deals 120; J. Jar of Oil of 24 Gallons; and a ½ Chest of Oil 30 Flasks, or 4 Gallons; Lt. Last, or Barrels of Pitch, containing 314 Gallons each; Q. Quarter, of 8 Bushels; T. Ton or 20 cwt; Tu. Tun of 252 Gallons.—NOTE, Wine is sold by Gauge, viz. Port per Pipe of 138 Gallons; Bucellas and Lisbon per Pipe of 140 Gallons; Sherry per Butt of 150 Gallons; Madeira per Pipe of 110 Gallons; Mountain per Butt of 126 Gallons; Vidonia per Pipe of 120 Gallons; Rhenish per Aum of 36 Gallons; and Claret per Hogshead of 57 or 58 Gallons; (all Increase and Decrease is adjusted.) All Kinds of Fish Oil is sold per Tun of 252 Gallons; Olive, Linseed, and Rape Oil, per Tun of 236 Gallons.

N. B The Duties which are paid by the Importers are included in the following Prices, and the Drawback, if Exported within three Years, is the Property of the Shipper.

	FROM £	s.	d.	TO £	s.	d.	per
ALUM English	23	0	0	24	0	0	T.
——— Roach	1	18	0	0	0	0	C.
Almonds Barbary Bitter	4	12	0	4	17	0	—
——— Sweet	4	10	0	0	0	0	—
——— Jordan	11	0	0	11	10	0	—
——— Valentia	4	15	0	5	10	0	—
Annatto Flag	0	1	6	0	2	0	—
——— Spanish	0	4	2	0	4	6	—
Argol Bolo. & Rhe. white	6	15	0	7	0	0	C.
——— Florence White	6	0	0	6	15	0	—
——— Red	6	5	0	6	10	0	—
——— Naples White	3	17	6	4	0	0	—
——— Red	3	12	0	3	14	0	—
Ashes Amer. Pearl,	3	10	0	4	0	0	—
——— Pot best	2	8	0	3	0	0	—
——— Barilla Teneriffe	2	10	0	2	16	0	—
——— Spanish	2	16	0	0	0	0	—
——— Sicily	2	6	0	0	0	0	—
——— Dantzic Pearl	uncertain			0	0	0	—
——— Russia Pearl	3	14	0	3	18	0	—
BERRIES, Juniper, Ger.	2	16	0	3	0	0	—
——— Italian	4	0	0	4	4	0	—
——— Yellow Turkey	4	0	0	0	0	0	G.
Brandy Best	1	2	9	1	2	3	—
——— Inferior	1	1	0	1	1	6	—
Brimstone Foreign Ro	22	10	0	28	0	0	T.
Bristles Hog Russia and	16	0	0	0	0	0	C.
——— Archangel do.	17	0	0	0	0	0	—
——— Konigsberg do.	19	0	0	25	0	0	—
CAPERS French	13	10	0	16	10	0	—
——— Spanish	7	10	0	10	10	0	—
Cochineal Spa. Garbled	1	0	6	1	4	0	lb.
——— East India	0	5	2	0	6	9	—
Cocoa West India	3	18	0	4	10	0	C.
——— Carracca for Export	5	16	0	6	6	0	—
Coffee W. I. very ord.	3	10	0	4	0	0	—
——— ord.	4	0	0	4	10	0	—
——— mid.	4	11	0	5	2	0	—
——— good	5	15	0	5	16	0	—
——— fine	5	16	0	6	10	0	—
——— Mochaor East Ind.	18	0	0	20	0	0	—
——— Java	5	0	0	6	0	0	—
Copper, unmanufac.	0	0	0	0	0	0	—
——— manufactured	0	0	0	0	0	0	—
——— Japan	0	0	0	0	0	0	—
Copperas, Green	0	6	3	0	0	0	—

		FROM £	s.	d.	TO £	s.	d.	per
Cotton Wool	Brazil Pernambuc	0	1	11	0	2	0	lb.
	Brazil Bahia	0	1	8	0	1	9½	—
	Brazil Maranham	0	1	8	0	1	9½	—
	Brazil Para	0	1	7	0	1	8	—
	Dutch Surinam	0	1	8	0	1	10	—
	Dutch Demerara	0	1	6	0	1	8	—
	Dutch Berbice	0	1	6	0	1	8	—
	West Indies. Carriacou	0	1	6	0	1	8	—
	West Indies. Grenada	0	1	5	0	1	6	—
	West Indies. Barbadoes	0	1	5	0	1	6	—
	West Indies. Domingo	0	1	2	0	1	4	—
	West Indies. Martinico	0	1	2	0	1	5	—
	West Indies. Jamaica	0	1	2	0	1	4	—
	No Ext allowed. Bahama	0	1	1	0	0	6	—
DYER'S Wood, Bar W.		27	0	0	0	0	0	T.
——— Brazil		84	0	0	0	0	0	—
——— Brazilet		10	0	0	12	0	0	—
——— Cam Wood		39	0	0	40	0	0	—
Dyer's W. Fustic		19	0	0	21	0	0	—
——— Zant or young		30	0	0	40	0	0	—
——— Logwood Camp		19	10	0	20	0	0	—
——— Hond. chipt		16	8	0	16	10	0	—
——— Jamaica chipt		15	15	0	16	16	0	—
——— unchipt		10	0	0	11	0	0	—
——— Nicaragia, large		34	0	0	38	0	0	—
——— small		11	0	0	14	10	0	—
——— Sanders Red		40	0	0	42	0	0	—
DRUGS.								
ALOES, Barbadoes		25	0	0	28	0	0	C.
——— Succotorine		20	0	0	22	0	0	—
——— Hepatic or E. I.		13	0	0	14	10	0	—
Angelica Root		7	0	0	7	7	0	—
Antimony Crude		5	10	0	6	0	0	—
Arsenic Red		3	15	0	4	0	0	—
——— White		3	5	0	0	0	0	—
Balsam Capivi		0	3	6	0	3	10	lb.
——— Peru		0	9	6	0	10	0	—
——— Tolu		0	4	0	0	4	9	—
Bark, Jesuits,		0	3	6	0	4	0	—
——— Red		1	13	0	1	14	0	—
——— Yellow		0	5	0	0	8	0	—
Borax, refined E. I.		3	10	0	4	14	0	C.
——— English		0	2	5	0	0	0	lb.
——— unrefined or Tinc.		5	10	0	5	15	0	C.
Camphire Refined		0	8	0	0	9	0	lb.
——— Unrefined		28	0	0	31	0	0	C.

	FROM £	s.	d.	TO £	s.	d.	per
Cantharides	0	10	0	0	10	3	lb.
Cardemoms (best)	0	7	0	0	10	6	—
Cassia Buds	14	0	0	14	4	0	C.
——— Fistula W. I.	3	15	0	5	0	0	—
——— Lignea	8	0	0	15	0	0	—
Castor Oil p. bot. 1½lb.	0	5	6	0	6	0	bo
Coculus Indicus	1	16	0	0	0	0	C.
Colocynth Turkey	0	3	0	0	3	6	lb.
Columbo Root	3	14	0	4	0	0	C.
Cream of Tartar	9	0	0	9	9	0	—
Essence of Bergamot	0	10	6	0	0	0	lb.
——— Lavender	0	7	6	0	8	0	lb.
——— Lemon	0	11	6	0	0	0	—
——— Origanum	0	7	6	0	8	0	—
——— Rosemary	0	4	6	0	5	0	—
Gallangal, East India	2	15	0	3	0	0	C.
Gentian Root	3	10	0	0	0	0	C.
Ginseng	0	2	0	0	2	6	lb.
Gum Ammo. Drop	22	0	0	26	0	0	C.
——— Lump	8	0	0	12	0	0	—
Gum Arabic E. I.	2	10	0	4	10	0	C.
——— Turkey fine	9	0	0	11	11	0	—
——— Barbary	2	16	0	3	0	0	—
——— Assafœtida	5	0	0	12	0	0	—
——— Benjamin	16	0	0	20	0	0	—
——— Cambogium	20	0	0	26	0	0	—
——— Copal scraped	0	3	6	0	4	0	lb.
——— Galbanum	8	10	0	9	0	0	C.
——— Guaiacum	0	3	6	0	5	0	lb.
——— Mastic	0	6	2	0	6	6	—
——— Myrrh	25	0	0	28	0	0	C.
——— Olibanum	6	0	0	9	0	0	C.
——— Sandrac	6	10	0	0	0	0	—
——— Seneca, garbled	3	0	0	5	2	6	—
——— Tragacanth	10	0	0	18	0	0	—
Jalap	0	3	4	0	3	6	lb.
Ipecacuanha	0	12	9	0	13	6	—
Isinglass, Book	1	1	0	0	0	0	—
——— Leaf	1	1	0	0	0	0	—
——— Long Staple	1	2	0	0	0	0	—
Manna,	0	6	0	0	6	3	—
Musk, China	0	17	6	1	0	0	oz
Nux Vomica	2	0	0	2	10	0	C.
Oil of Vitriol	0	0	4	0	0	4½	lb.
Opium,	1	4	0	1	10	0	—
Pink Root	0	1	0	0	1	2	—
Quicksilver	0	4	2	0	0	0	—
Rhubarb, East India	0	2	6	0	7	0	—
——— Russia	0	18	0	1	2	0	—
Saffron	1	16	0	2	2	0	C.
Sago	1	18	0	2	6	0	—
Sal Ammoniac	9	15	0	0	0	0	—
Salop	15	15	0	0	0	0	—
Sarsaparilla	0	1	10	0	3	3	lb.
Sassafras	3	0	0	0	0	0	C.
Scammony,	1	15	0	1	17	0	lb.
Senna	0	4	0	0	5	6	—
Seeds, Anni. Alicant	6	0	0	6	6	0	C.
——— Coriander, English	1	3	0	1	5	0	—
——— Cummin	3	8	0	4	0	0	—
——— Fenugreek	3	16	0	4	0	0	—

	FROM £	s.	d.	TO £	s.	d.	per
Shellack	4	0	0	8	0	0	C.
Sticklack	4	10	0	7	0	0	—
Snake Root	0	3	3	0	3	6	lb.
Soap, Castile or Spanish	8	0	0	8	10	0	C.
Soap, Yellow	4	18	0	0	0	0	C.
——— Mottled	5	8	0	0	0	0	—
——— Curd	5	12	0	0	0	0	—
Spermaceti refined	0	2	4	0	0	0	lb.
Tamarinds West India	5	5	0	0	0	0	C.
Tapioca Lisbon	0	0	6	0	1	0	lb.
Turmeric, Bengal	4	4	0	0	0	0	C.
——— Chipa	4	10	0	5	0	0	—
——— West India	3	10	0	3	15	0	—
Verdigris Wet	0	1	4	0	1	6	lb.
——— Dry	0	4	4	0	4	6	—
——— Crystalized	0	7	0	0	8	0	—
Vitriol Roman	0	0	7	0	0	7½	—
EBONY Black Rose	28	0	0	35	0	0	T.
——— Green	12	10	0	13	10	0	—
Eleph T. 70 to 90lb each	30	0	0	32	0	0	C.
——— Scrivelloes	14	0	0	20	0	0	—
FEATHERS Dantz.	0	3	2	0	3	3	lb.
——— Hambro'	0	1	9	0	2	8	—
——— Russia	0	1	10	0	2	9	—
——— Down	0	3	9	0	4	0	—
Flax, Riga	102	0	0	104	0	0	T.
--Petersburgh 12 head	100	0	0	108	0	0	—
GALLS, Aleppo blue	6	15	0	7	0	0	C.
——— mixt	5	5	0	5	10	0	—
Geneva Holland	1	2	6	1	3	0	—
Glue, For. dry thick lea.	3	5	0	3	6	0	—
——— thin	3	0	0	0	0	0	—
HEMP, Riga Rhine H	97	0	0	100	0	0	T.
——— Out shot	94	0	0	0	0	0	—
——— Codilia	83	0	0	0	0	0	—
——— Petersburg Clean	97	0	0	100	0	0	—
Hides Raw West India	0	0	4	0	0	5	lb.
——— Buenos Ayres	0	0	6	0	0	6½	—
——— Brazil	0	0	4½	0	0	5	—
——— Horse, British	0	15	6	0	16	0	Hi
INDIGO.							
Spanish: Guatimala Flora	0	10	0	0	11	3	lb.
Spanish: ——— Sobres	0	8	9	0	10	0	—
Spanish: ——— Cortes	0	5	0	0	8	6	—
Spanish: Carracca Flora	0	9	3	0	10	9	—
Spanish: ——— Sobres	0	8	3	0	9	0	—
Spanish: ——— Cortes	0	5	3	0	8	0	—
East Ind. Brazil	0	3	0	0	4	6	—
East Ind. Blue	0	9	3	0	10	6	—
East Ind. Purple	0	8	3	0	9	6	—
East Ind. Copper and violet	0	6	6	0	8	6	—
East Ind. Copper	0	3	3	0	7	3	—
IRON British in bars	18	0	0	0	0	0	T.
——— in pigs	9	10	0	0	0	0	—
——— Old Sable	27	0	0	27	10	0	—
——— New Sable	22	0	0	23	0	0	—
——— Gurioffs	24	10	0	26	0	0	—
——— Archangel	0	0	0	0	0	0	—
——— Swedish	30	0	0	31	0	0	—
LEMONS repa.	6	0	0	0	0	0	C

	FROM £	s.	d.	TO £	s.	d.	
Licorice Italian	10	10	0	11	0	0	C.
——— Spanish	9	5	0	9	10	0	—
Lead, Pigs	43	0	0	0	0	0	T.
——Mill'd or Sheet	46	0	0	0	0	0	T.
——Bars	45	0	0	0	0	0	—
——Shot No. 1 to 5	45	10	0	0	0	0	—
———— 6 to 12	46	0	0	0	0	0	—
——Litharge	48	0	0	0	0	0	—
——Red	44	0	0	0	0	0	—
——White	56	0	0	0	0	0	—
——Ore	37	0	0	0	0	0	—
MADDER, Dutch Cro.	5	10	0	6	10	0	C.
———Ombro	4	5	0	5	10	0	—
———Gamene	1	10	0	4	0	0	—
———Mulls	0	7	0	1	5	0	—
——— Roots	0	75	0	0	0	0	—
Mats, Archangel	11	5	0	0	0	0	H.
OIL Lucca or Sallad	30	0	0	35	0	0	Jr
———½ chest	4	4	0	4	10	0	—
——Olive Barbary	81	0	0	82	0	0	T.
——Gallipoli	79	0	0	0	0	0	—
——Palm	3	15	0	0	0	0	C.
——Turpentine, Eng.	4	10	0	4	16	0	—
———Foreign	4	10	0	4	12	0	—
——Rape English	63	0	0	0	0	0	T.
———Refined	66	0	0	0	0	0	—
——Linseed, English	88	0	0	0	0	0	—
——Cod Newfound.	37	0	0	0	0	0	—
——Sperm.	102	10	0	0	0	0	—
———Head Matter	107	0	0	0	0	0	—
——Whale, Greenland	34	10	0	0	0	0	—
——Brazil or S. Fish	40	5	0	0	0	0	—
Oranges Lisb. repa. best	6	10	0	0	0	0	cb
———St. Michael's	0	0	0	0	0	0	bx
Orchil-Weed, Canary B.	none			0	0	0	T.
———Inferior	140	0	0	0	0	0	—
——Cape de Verd	90	0	0	0	0	0	—
PITCH American	1	3	0	0	0	0	C.
——Archangel	1	2	0	0	0	0	—
——Sweden	0	15	0	0	0	0	—
——British	1	1	0	0	0	0	—
PROVISIONS. Butter Carlow 1st	4	10	0	4	12	0	—
Butter Cork 1st	4	6	0	4	10	0	—
Butter Waterford 1st	4	2	0	4	4	0	—
Butter Holland	0	0	0	0	0	0	—
Butter Friesland	4	15	0	5	10	0	—
Butter York Best	2	12	0	2	14	0	Fi
Butter Cumberland	2	10	0	2	12	0	—
Irish Bacon new	3	16	0	4	2	0	C.
Irish Beef India	10	0	0	10	5	0	Ti
Irish Beef mess	7	10	0	7	12	6	—
Irish Pork India	9	5	0	9	10	0	Ti
Irish ——new mess	5	7	6	5	10	0	—
Hams	4	10	0	5	10	0	C.
——Westphalia	4	0	0	4	10	0	—
Rags Hambro' SPF	2	16	0	0	0	0	C.
——— FF	2	6	0	2	8	0	—
——— FX	1	15	0	0	0	0	—
———Italian fine	3	5	0	0	0	0	—
———Seconds	2	16	0	0	0	0	—
Rice	1	8	0	1	4	0	—

		FROM £	s.	d.	TO £	s.	d.	
RAISINS, &c. Wholesale D's Prices.	Currants	3	10	0	4	0	0	C.
	Figs Faro	2	6	0	0	0	0	—
	——Turkey	2	10	0	3	0	0	—
	Prunes new	3	16	0	4	4	0	—
	Muscatels	5	0	0	10	0	0	—
	Bloom or Jar	4	0	0	7	0	0	—
	Sun or Solis, new	3	0	0	4	0	0	—
	Denia or Malaga	2	6	0	2	12	0	—
	Sultana	4	10	0	4	16	0	—
	——Red new	3	8	0	4	0	0	—
Rosin		0	19	0	1	0	0	—
Rum Jamaica		0	4	3	0	6	3	G.
—— Leeward Island		0	3	3	0	3	6	—
SACCARUM Saturni		0	1	3	0	0	0	lb.
Safflower		8	10	0	0	0	0	C.
Saltpetre, Ea. In. Rough		4	0	0	0	0	0	—
———British, Refined		4	7	0	4	10	0	—
Smalts		0	1	7	0	2	1	lb.
Shumack		0	6	0	1	10	0	C.
Skins undressed	Goat Turkey	1	5	0	2	15	0	D.
	—Mogadore	1	15	0	2	10	0	—
	Lamb Italian	12	12	0	0	0	0	—
	—— Spanish	6	0	0	6	10	0	—
	Kid Italian	16	0	0	17	0	0	120 sk.
	—— Spanish	6	0	0	9	0	0	—
	Seal Greenl.	0	2	11	0	0	0	sk.
	—So. Fishery	0	6	0	0	10	0	—
	Calf British	0	10	0	0	12	6	—
	—For. salted	0	0	6	0	0	11½	lb.
Silk Thrown 16 oz. to a lb. Raw 16oz. to a lb.	Bengal Skein	0	19	0	0	28	0	—
	——— Novi	0	23	0	0	44	0	—
	China 3 moss	none			0	0	0	—
	—— 6 moss	0	32	6	0	38	0	—
	Milan	16	0	0	48	0	0	—
	Reggio	0	28	0	0	30	0	—
	Brutia	0	27	0	0	30	0	—
Silk	Bergam	0	62	0	0	66	0	—
	Brescia	none			0	0	0	—
	Modena	none			0	0	0	—
	Piedm	0	70	0	0	75	0	—
	Milan	60	0	0	65	0	0	—
Spices, Cinnamon		0	9	0	0	10	0	lb.
——Cloves		0	9	6	0	10	6	—
——Mace Long		2	6	0	2	7	0	—
——Nutmegs		1	0	0	1	5	0	—
—Ginger, Barbadoes W.		4	0	0	4	4	0	C.
——Jamaica Black		3	4	0	3	10	0	—
———White		8	15	0	12	12	0	—
——East India		3	10	0	4	10	0	—
——Pepper		0	2	7	0	0	0	lb.
———White		0	4	4	0	0	0	—
———Dust		0	6	0	0	7	0	C.
———Long		7	10	0	8	0	0	—
—Pimento or Jam. Pep.		0	1	10	0	1	11	lb.
Spirits Malt		0	15	3	0	0	0	G.
SUGAR. Waterside P.	Antigua	0	64	0	0	70	0	C.
	Barba. Clayed 1st	0	69	0	0	72	0	—
	———— 2d	0	76	0	0	78	0	—
	———— 3d.	0	69	0	0	72	0	—
	Musco. or brown.	0	64	0	0	70	0	—
	Dom. Nev. & Tor.	0	63	0	0	74	0	—

		TO £	s.	d.	FROM £	s.	d.	C.	
SUGAR. Waterside Prices.	Grenada Muscov.	0	63	0	0	67	0		
	Jamaica brown	0	63	0	0	65	0		
	—— middling	0	66	0	0	67	0		
	—— good	0	68	0	0	70	0		
	—— fine	0	74	0	0	76	0		
	St Kitts & Monts.	0	65	0	0	72	0		
	Tobago & St Vin.	0	63	0	0	71	0		
	Surinam & Dem.	0	63	0	0	68	0		
	Trinidad	0	63	0	0	71	0		
	East India	0	62	0	0	78	0		
SUGAR. Sugar Brokers Prices.	Ground tips	0	64	0	0	65	0		
	—— middles	0	68	0	0	70	0		
	—— Faces	0	72	0	0	76	0		
	Lumps, Brown	0	94	0	0	99	0		
	—— Middling	0	102	0	0	104	0		
	—— Best	0	105	0	0	108	0		
	Sing. Loa. Brown	0	100	0	0	113	0		
	—— Middling	0	103	0	0	105	0		
	—— Best	0	107	0	0	110	0		
	Powder Loave	0	104	0	0	114	0		
	Molasses	0	32	0	0	32	0		
TALLOW Town		0	0	0	0	0	0		
—— Russian Yellow		4	6	0	4	7	0		
—— White		4	2	0	0	0	0		
—— Soap		4	2	0	4	3	0		
Rough Fat aver. of 3 m.		0	5	2	0	0	0		
TAR Carolina		uncert.			0	0	0		
—— Virginia					0	0	0		
—— Archangel		2	0	0	0	0	0		
—— Stockholm		2	2	0	2	15	0		
TEA without Duty or Excise.									
—— Bohea		0	1	6	0	1	9	lb.	
—— Congou		0	3	0	0	3	5		
—— Campoi		0	3	2	0	3	6		
—— Pekoe		0	3	9	0	4	0		
—— Twankay		0	3	2	0	3	6		
—— Hyson Skin		0	3	6	0	3	6		
—— Hyson		0	4	6	0	6	6		
—— Gunpowder		0	4	8	0	7	0		
TIN in bars on board		6	2	0	0	0	0	C.	
—— In Blocks do.		6	3	0	0	0	0		
—— Grain in blocks		8	0	0	8	8	0		
TIMBER. Deals	Dantz 3inby 40 ft								
	—— 2½ —— 36	0	0	0	0	0	0		
	—— 2 —— 30	0	0	0	0	0	0		
	Archangel	0	0	0	0	0	0		
	Petersburgh	0	0	0	0	0	0		
	Narva Yellow	0	0	0	0	0	0		
	—— White	0	0	0	0	0	0		
Dantzick Fir		0	0	0	0	0	0	each per C. red	

		FROM £	s.	d.	TO £	s.	d.	
TIMBER. American	Memel Fir	0	0	0	0	0	0	
	Riga Fir	0	0	0	0	0	0	
	Oak Board	0	0	0	0	0	0	
	Pine Boards	0	0	0	0	0	0	
	Timber	0	0	0	0	0	0	
Tobacco bonded	Maryland fi.	0	1	0	0	1	2	
	Good Colour	0	0	9	0	0	11	lb.
	—— Middling do.	0	0	8	0	0	9	
	—— Virginia fine	0	0	9	0	1	0	lb.
	—— Ordinary	0	0	5	0	0	6	
	—— Carolina	0	0	5	0	0	9	
	—— Georgia	0	1	10	0	2	0	
	—— Strip leaf	0	0	7	0	1	0	
	—— Turkey	0	1	2	0	1	6	
Tortoise-shell		0	17	6	1	4	0	
Turpentine, American		1	10	0	0	0	0	C.
Valonia		22	0	0	0	0	0	T.
Vermilion, Dutch		0	4	10	0	5	0	lb.
—— China		0	6	0	0	10	0	
WAX, Bees, English		17	0	0	0	0	0	C.
—— American		16	10	0	17	0	0	
—— African		10	15	0	13	10	0	
—— Dantzic & Ham.		17	0	0	0	0	0	
—— Hambro' white		0	3	6	0	3	10	lb.
WINE. Dealers Prices of	Red Port	90	0	0	96	0	0	P.
	—— Old	100	0	0	0	0	0	
	Sherry	92	0	0	100	0	0	Bt
	Lisbon	87	0	0	90	0	0	P.
	Vidonia	75	0	0	78	0	0	
	Bucellas	95	0	0	0	0	0	
	Mount. Old	75	0	0	80	0	0	Bt
	Madeira Old	80	0	0	120	0	0	P.
	Claret	70	0	0	90	0	0	H.
	Rhenish	0	0	0	0	0	0	A.
Wood, Box American		0	0	0	0	0	0	T.
—— Turkey		16	0	0	23	0	0	
—— Cedar, Carolina		0	0	6½	0	0	9	Ft
—— Jamaica		0	1	0	0	0	0	
Lignum Vitæ Jamaica		14	0	0	32	0	0	T.
—— Providence		11	0	0	21	0	0	
—— Mahogany Hispa.		0	1	8	0	2	4	Ft
—— Honduras		0	1	3	0	1	6	
—— Providence		none			0	0	0	
Wool Beav. Ruffing Best		0	82	0	0	0	0	lb.
—— Wooms Brown		0	80	0	0	0	0	
—— Best White		0	74	0	0	57	0	
—— White Stage		0	46	0	0	0	0	
—— Coat Seasoned		0	40	0	0	0	0	
—— Coney English		0	17	6	0	0	0	
—— Goats Smyrna		0	4	6	0	5	9	
—— Vigonia Red		0	11	0	0	14	0	
—— Pale		0	4	6	0	5	0	
Yarn Mohair Smyrna		0	4	6	0	9	0	

PREMIUMS OF INSURANCE FROM LONDON.

At 1½ gs. To Yarmouth, Hull, Newcastle, Liverpool, Chester, &c.—At 2 gs. Ports of Scotland, Weymouth, Dartmouth, Plymouth.—At 3 gs. Dublin, Cork, Derry, Limerick, Bristol, Chester, &c. From Liverpool, Bristol, &c. to Dublin, Cork, or Waterford.—Bengal, Madras, or China.—At 4 gs. St. Helena, or Cape of Good Hope, Dublin, Cork. &c. to London. (Comp. ships) return 2l. From Poole, &c. to Newfoundland, to U. S. of America, American ships.—At 5 gs. To Madeira to U. S of America.—At 6 gs. Gibraltar, Madeira, return 3l.—At 8gs. Newfoundland, Labradore, &c Jamaica, or Leeward Islands.—Brazil, South America, return 4l.—At 10 gs. Senegambia; U. S. of America (Brit. Ships) return 5l. Jamaica, South America.—At 12 gs. To Musquito shore, Honduras, &c. return 6l.—To East Indies, or home.—East Indies to London.—Westward and Leeward Islands to U. S. of America, Quebec, Montreal, &c.—At 20 gs. Southern Whale-fishery.—At 25 gs. Newfoundland, Jamaica, and Westward Islands.

Daily Prices of STOCKS, from 20th of JUNE to 20th of JULY 1809.

	Bank Stock.	3 per cent. Reduced.	3 per Cent. Consols.	4 per Cent. Cons. 1780.	3 per Cent. Def.	Navy 5 per Cent.	Long Annuities.	Consol Short An.	5 per Cent. 1797.	Omnium.	Imperial 3 per Cent.	Ditto Annuities.	India Stock.	India Bonds.	Old Annuities.	New Ditto.	Navy and Vict. Bills.	3½ d. Exchequer Bills.	Lottery Tickets. £ s. d.	Consols for Acct.	Irish Omnium.	Irish 5 per Cent.
1809.																						
June 20	261	68		83⅛			18				p	75						8 1p		69⅛		
21	260¾	68⅛		83⅛			18				p	75		14 16p				1 9p		69		
22	259	68⅛		83⅛			18				1p			16 17p	67⅛			2 10 8 9 p		69⅛		
23	259¾	68⅛		83⅛			18				p	66¾		16 17p				3 11p		69⅛		
26		68⅛		83⅛							p			16 17p				2 10p		69⅛		95 ⅛
27		68⅛		83⅛			18				p			16 17p				4 11p		69⅛		
28		68⅛		83⅛			18				p	66¾		16 17p				4 11p		69		95 ⅛
30	260	68⅛		83							p			16 17p				5 11p		69⅛		
July 1	260	68⅛		83⅛										17 18p				6 12p		69		
3		68⅛					18					66⅛		19 20p				8 13p				
4	260¼	68⅛		83⅛			18					66⅛		19 20p				17 13p		69		
5		68⅛		83⅛			18					66⅛	75	19 20p				6 13p				
6		68⅛	67⅛	83⅛		98⅛	18			1 ⅜p				19p				17 13p		69		
7		68⅛	67⅛	84		98⅛	18⅛					67		19 20p				6 13p		69		
8		68	67⅛	84		98	18⅛							191⅛ 20 21p				7 13p		69		
10		68⅛	67⅛	84		98⅛	18⅛			1 p				192⅛ 21 24p				8 14p		69⅛		96 ¼
11	260½	68⅛	67⅛	84⅛		98⅛	18⅛			1 p		68		191⅛ 23 24p				9 14p		69⅛		
12		68⅛	67⅛	84⅛		98⅛	18¼			1 p		68		191⅛ 23 24p				9 14p		69¼		
13	260¼	68⅛	68	84⅛		98⅛				1 p				191⅛ 23 24p				9 14p		69⅛		
14	261¼	68⅛	68	84⅛		98⅛	18¼							191⅛ 22 23p				9 13p		69¼		96 ¼
15		68⅛	68⅛	84⅛		98⅛	18⅛			1⅛ ½		7⅛		190⅛ 23 20p				9 12p		69⅛		
17		69	68	84		99	18⅛			1 ⅛p				19 18p				9 13p		69⅛		
18	261¼	69	68⅛	84⅛		98	18			1 ⅛p				190⅛ 19 20p				8 13p		69¼		
19		68⅛	68⅛	84⅛		98⅛	18⅛			1⅛ ⅛p				20 18p				12 6p		69⅛		
20	261	68	69	84¼		98¼	18¼			1¼ 1p				20 18p				6 12p		69⅛		

The above are taken at the highest prices of the day.

ISAAC VALE, Stock-Broker, 74, Bishopsgate Without.